Ian Shanahan (1991/1993)

– In Memoriam Barbara Burke (27.9.1931 – 23.5.1991)

For Roger Dean and Daryl Pratt to play with me:

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Lines of Light

Seven Improvisations on αιθερος μελος

for

amplified recorders (1 player),
two Yamaha DX7 keyboard synthesizers (1 or 2 players),
and
metallic percussion instruments (1 or 2 players)

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PROGRAMME ANNOTATION

Lines of Light: Seven Improvisations on αιθερος μελος

for amplified recorders, two Yamaha DX7 keyboard synthesizers, and metallic percussion instruments

Ian Shanahan (1991/1993)

My title "Lines of Light" is appropriated from a novel of the same name by Daniele Del Giudice, consisting almost entirely of a dialogue between a novelist and a theoretical physicist. I have been able, with this title, to genuinely imbue the work with meaning at a number of levels. Metaphorically, **Lines of Light** invokes the notion of solar spectra, as manifested by the phenomenon of the arcing rainbow which appears to comprise seven colours and various Fraunhofer absorption lines (dark spectral bands – suppressed frequencies – evincing the coolness of the Sun's surface compared to its much hotter core). Hence, this piece embraces seven sections, all but the last being proportioned according to the relative wavelengths of Fraunhofer lines A to H. (The fact that there are only three primary colours is mirrored by the minimum number of players.) Moreover, I would hope that the sounds themselves which emanate from my unusual instrumental array provoke, within the listener's mental landscape, various images of light.

Beyond this physical metaphor, I have extensively utilized more ancient and mystical associations with the word/ikon of light. The final section of **Lines of Light**, *αιθερος μελος* (*aitheros melos*: "Music of the Spheres") – a transcription from an earlier version of this piece – exhibits a temporal organization and proportions which are determined by *gematria*, the Ancient Greek (and Jewish) Kabbalistic system of isopsephial equivalence between word and number that demonstrates various geometrical truths, and ascribes arithmetically a network of hidden connections to otherwise distinct words and archetypes. (In addition to certain Gnostic texts, the sacred hermetic writings of the Platonists and Pythagoreans – as well as the Holy Scriptures in the New Testament – are all supersaturated with the silent, mysterious truths of 'number'.) On the other hand, the first six "improvisations" in **Lines of Light** – whose basis-materials nonetheless stem from the fully composed *αιθερος μελος* – were planned to fill out 485 seconds, proceeding from 'chaos' to 'order'. (485 ≈ ΙΕΟΥ, the Greek mystics' *Tetragrammaton*, equivalent to the *OM* of Eastern cosmogony. Also, not insignificantly ... 485 ≈ Ὁ Πανάγιος: The All-Holy.)

Lines of Light: Seven Improvisations on *αιθερος μελος*, commissioned by the neoteric new-music ensemble *austraLYSIS* with funds from the Performing Arts Board of the Australia Council for the Arts, is dedicated to the memory of Barbara Burke – an Australian Christian worker murdered in Jerusalem during the early 1990s. Her name, together with various Biblical epigrams on 'light' (φως: *phos*), is cryptically encoded into the music. (I do trust that Mrs Burke would have approved of the esoteric Christian imagery!)

Lines of Light: Seven Improvisations on αιθερος μελος *was premièred by Ian Shanahan (amplified recorders), Roger Dean (Yamaha DX7 keyboard synthesizers), and Daryl Pratt (percussion), during an austraLYSIS concert – "Redesigning the System" – held at the Joseph Post Auditorium, Sydney Conservatorium of Music, Conservatorium Road, Sydney, on 27 November 1993.*

A recording of ***Lines of Light: Seven Improvisations on αιθερος μελος****, played by the same personnel, is now commercially available on the Compact Discs "Lines of Light" (Broad Music Records Jade JAD CD 1091) and "Harmonia" (SIDEREAL Records SRCD01).*

PERFORMANCE NOTES

PREAMBLE

I wish to thank *Roger Dean* for his patience in demonstrating to me, prior to composing **Lines of Light: Seven Improvisations on *αιθερος μελος***, the new features of his Yamaha DX7 Series II model (relative to the original Series I Yamaha DX7, with which I was already very familiar). I am also indebted to *Daryl Pratt* who, as usual, was keen to share his immense knowledge of the percussion genre and how to compose intelligently with it: for example, in deciding upon the layout of the metallic percussion instruments in **Lines of Light**, Daryl's expert advice was invaluable. I thank him for his affable generosity.

1. GENERAL REMARKS

INSTRUMENTATIONAL REQUIREMENTS, AND THE NUMBER OF PLAYERS

• ***Amplified Recorders*** (1 player)
  – prepared alto recorder *
  – soprano recorder
  – *keyless* tenor recorder †

• **2 *Yamaha DX7 Keyboard Synthesizers*** (1 or 2 players)
  – DX7 I: a Yamaha DX7 Series I (or Series II)
  – DX7 II: a Yamaha DX7 Series II ‡

  Note: both of these Yamaha DX7 keyboard synthesizers must have a *foot switch pedal* (i.e. a 'sustain pedal', for *sustain on/off*) and a *foot controller pedal* (i.e. a 'volume pedal', for varying the *volume*) connected to them.

• ***Percussion*** (1 or 2 players [and an *optional* assistant who shall control the vibraphone's vibrato])
  – tubular bells
  – 7 Japanese temple bells (*rin*)
  – Chinese bell tree
  – large autocoil
  – 'triangle windchime' (3 triangles)
  – 2 (or more) brass-tube windchimes
  – crotales (the lower octave)
  – vibraphone (*optional*: employ an assistant to regulate its rate of vibrato)

  Note: detailed descriptions of all of these metallic percussion instruments shall be given later; I have also appended to these Performance Notes a diagram depicting their *physical layout*.

* Complete instructions for the alto recorder's preparation are provided below.

† It is imperative that the tenor recorder be *keyless*: several tenor recorder sonorities within **Lines of Light: Seven Improvisations on *αιθερος μελος*** can be produced *only on a keyless instrument*! (Because the keyless tenor recorder is slightly shorter than models possessing one or two keys, so that the keyless tenor recorder's bore is somewhat more conical, its intervals between successive vibrational modes tend to be 'stretched' a little by comparison with those generated by a more cylindrical bore: for instance – considering the final gesture of **Lines of Light** – overblowing the lowest C♮ of a keyless tenor recorder yields a minor-9th multiphonic, whereas on a keyed instrument, a very different 'split octave' sonority will probably ensue. Further, being more versatile in negotiating contemporary recorder techniques such as glissandi/portamenti and microtones, a majority of players prefer the keyless tenor recorder in performing twentieth-century repertoire.)

‡ I have stipulated a *Series II* Yamaha DX7 here primarily because it possesses – amongst other things – a 'split-key' faculty: i.e. on a solitary synthesizer keyboard, a *pair* of distinct 'voices' can be played, separately, upon discrete sets of keys, the 'split-key' defining the boundary between such (single) 'voices'; this 'split-key' option is used crucially in the fourth and seventh sections of **Lines of Light**. Therefore, if a Series II Yamaha DX7 is unobtainable, then a second keyboardist will definitely be required to play upon *two* Series I Yamaha DX7 synthesizers, with the original keyboardist utilizing a *third* Yamaha DX7 Series I! Alternatively, as Yamaha DX7 keyboard synthesizers (though ubiquitous throughout most of the 1980s and '90s) become increasingly rare in the future, some more recent (Yamaha) digital FM-synthesis devices – including 'software synthesizers' like Native Instruments' **FM7** – that can reproduce Yamaha DX7 voices *exactly* may be employed instead to realize this piece.

TEMPORAL ORGANIZATION, AND INTERPRETATION

Lines of Light: Seven Improvisations on *αιθερος μελος* embraces seven sections, 1 to 7, these section-numbers being clearly drawn within *bold boxes*; the sections themselves are bounded by *bold bar-lines*. Each section as usual comprises several bars (demarcated by regular bar-lines), but with *all* bar-lengths throughout **Lines of Light** being defined in *seconds* rather than in 'beats'. (The number written within a rectangular box above the stave at the start of each bar therefore indicates that bar's duration *in seconds*.) Please observe that bar-lines of whatever type in themselves *never* imply any pauses, disconnections or caesurae, however ephemeral – unless otherwise indicated. Note also that within section 1 of **Lines of Light**, each part has its own sequence of bar-lengths different from (indeed, a permutation of) those of the other parts, so that – aside from the first two bars – the bars' beginnings therein are not at all coordinated: across all parts within section 1, each part's bar-lengths evolve quite autonomously, not being synchronized together. In section 2 of **Lines of Light** however, the recorder part unfolds bar by bar, independently, against *coordinated* but temporally indeterminate "interjections" – notated in large bold boxes – from the other parts.

Sections 3, 4, 5, 6 and 7 in **Lines of Light** are notated entirely in *time-space notation*, so that the relative widths of bars written into each part conform directly with their relative durations. Therefore, at least as a starting-point, musical events in these sections are to be deployed chronometrically in direct proportion to their relative horizontal placement upon the score-page. Yet 'pure' time-space notation is intrinsically optical and rather imprecise (because it naturally precludes total chronometric accuracy), and so triggers a somewhat freer interpretative approach towards time by performers – who will often need to flesh out local durational nuances herein. However, in order to increase the likelihood of executative durational precision within sections 6 and 7 of **Lines of Light**, these final two sections also engage numbered 'ictuses' (short, thick vertical strokes) corresponding to *one second* of elapsed time, according to the formula *25.4 millimetres (i.e. 1 inch) ≈ 1 second = metronome 60*. Within such a framework of temporal proportionality in the recorder part, *beams* depict (local) durations – the end of a beam indicating a cessation of breath, the termination of a (previously sustained) note.

An electronic metronome flashing once per second might prove to be an effective practice tool in keeping track of time within **Lines of Light**'s proportionalized chronomorphology. (Yet any sense of metricated rigidity, or blatant pulsedness, is strongly discouraged!) Furthermore, I do firmly recommend that in concert, every player be able to see plainly such a flashing metronome; yet it is also essential that the passing seconds be 'corporealized' – i.e. *felt* with the *body* – so that in live performance, any visual references to a flashing metronome are minimal, being made only when it is considered absolutely necessary.

The following table summarizes the temporal schemata and notations that I have adopted within each section of **Lines of Light: Seven Improvisations on *αιθερος μελος***:

Section	Proportional bar-lengths?	Ictuses utilized?	Independent bar-lengths across all parts?
1	No	No	Yes
2	No	No	'Yes': recorder against *coordinated* interjections
3	Yes	No	No
4	Yes	No	No
5	Yes	No	No
6	Yes	Yes	No
7	Yes	Yes	No

Grace-note groups all lie 'outside time' – locally independent of the time-space paradigm and any other durational mechanisms. In general, they should be played quite rapidly or even 'as fast as possible' (i.e. as [very] short indeterminate durations, left to the discretion of the player) – although tenuto markings may be used to suggest a more leisurely approach. Indeed, nuances in horizontal spacing amongst grace-notes propound a correspondingly delicate rhythmic interpretation that is, notwithstanding, left to the discretion of the executant to some extent. Furthermore, despite their autonomous unfurling, grace-notes ought not to be thought of as mere 'ornaments', of secondary architectonic status, to the 'main notes': *all* sonorities in **Lines of Light** are equally important!

 – a *decelerando* within the grace-note grouping.

PAUSES

Unless otherwise indicated, precise durational details of pauses are left to the interpretation of the performers. The following symbology is employed:

 is a *comma*, denoting a *slight caesura* – not necessarily for the purpose of taking a breath;

 is a *peaked fermata*, denoting a *relatively brief pause* (increasing a specific duration – such as the *ca.*4" static "suspended time" segment towards the end of section 7 – by no more than a factor of 2);

 is a *squared fermata*, denoting a *relatively lengthy pause* (increasing a specific duration by at least a factor of 2.5).

CUEING ONE ANOTHER

Throughout each part in **Lines of Light: Seven Improvisations on *αιθερος μελος***, instructions are provided for *cueing one another* – to *coordinate, at a given moment, the attack (or the ending) of a sonority with another player or instrument*. Such instructions occur in two cognate forms:

– *a large bold arrow pointing downwards*, which signals the instant when *everybody* must coordinate with one another (NB: this 'generalized cue' occurs almost exclusively within the final [tutti] section of **Lines of Light**, section 7);

– when such an arrow also has *the name of another part or another instrument written directly above it*, the performer must coordinate with that particular player or instrument (only) at the given instant.

All executants are encouraged to discover, thence to notate within their own parts, additional points in the music when cueing one another might prove salutary.

DYNAMIC INDICATIONS

Apart from the traditional dynamic indications (*ppp*, *pp*, *p*, *mp*, *mf*, *f*, *ff*, *fff*), the following symbols are employed in **Lines of Light: Seven Improvisations on *αιθερος μελος***:

○ represents the final vanishing into *inaudibility*: allow the sound to resonate, or attenuate, to *silence*;

p poss. and *f poss.* are abbreviations for 'as soft as possible' and 'as loud as possible', respectively;

certain passages in **Lines of Light** are assigned a general *dynamic range*, including the minimum and maximum permissible dynamic levels: e.g. *p*↔*mf*; between these limits, players are free to select and shape dynamic levels and contours for themselves.

ARPEGGIATION

 – *arpeggiate* the notes in a somewhat leisurely manner.

 – *rapidly* arpeggiate the notes of the chord.

For both forms of *arpeggiation*, their speed of execution is left to the discretion of the player. *Arrowheads* upon the above symbols indicate the *direction* of the arpeggio's action: ↑ = play the *lowest pitch* of the chord first; ↓ = play the *highest pitch* of the chord first.

PITCH DESIGNATION

In any textual references to pitch herein:

"Middle C" [i.e. MIDI note number 60] shall be designated as C♮3, the C♮ one octave higher as C♮4, etc. (i.e. assuming that A♮3 = 440 Hz, then C♮3 ≈ 261.6255653 Hz).

♯ and 𝅘𝅥 denote a *quartertone above* ♮ , and a *quartertone below* ♮ , respectively. Smaller degrees of intonational deviation – slight microtonal inflections, non-tempered, of up to about an eighthtone – upwards and downwards are indicated by upward-pointing and downward-pointing arrowheads, respectively, upon accidental symbols. Examples: B𝅘𝅥5; F♯4; A♭3; G𝅘𝅥2 etc.

RANDOMIZED PARAMETERS

Within each of the three instrumental parts which comprise **Lines of Light: Seven Improvisations on *αιθερος μελος***, a number of technical/musical parameters are bracketed thus: *Rand { }*. Until countermanded by some other randomization directive, all of these bracketed parameters may be randomly transformed, introduced, or eliminated in performance. As such, they provide an improvisational stimulus to the players while framing the artistic boundaries within which the music can evolve.

Related 'curly bracket notations' involving randomized parameters are:

+Rand { } – add these bracketed parameter(s) to the previous *Rand { }* directive;

–*Rand { }* – subtract these bracketed parameter(s) from the previous *Rand { }* directive;

End Rand { } – end the randomization of these bracketed parameter(s);

End Rand – end *all* randomization of technical/musical parameters: *Rand { }* is concluded.

Whenever *Rand { }* is in operation, any technical instructions notated between parentheses – ( ) – take mandatory precedence, locally and temporarily overriding the randomization process. For instance, a sonority assigned the dynamic indication (*ppp*) during a passage when *Rand {p↔mf}* is functional, *must* be played in *ppp*, irrespective of this particular *Rand { }* directive!

2. THE AMPLIFIED RECORDERS: DETAILS

AMPLIFICATION OF THE RECORDERS

In order for the recorders to achieve adequate acoustical projection and a proper balance with the other instruments in **Lines of Light: Seven Improvisations on *αιθερος μελος***, some discreet sound-reinforcement of the recorders (with a high-quality cardioid or omnidirectional air microphone) will be necessary in concert – i.e. *all recorders must be amplified*! However, the level of amplification ought to be kept to a minimum, so that the recorders' natural timbres will be heard as clearly as possible: so, excessive sound-reinforcement is to be avoided. Optimally, the loudspeaker(s) for the recorders should be positioned near the recorder-player, so as to create the impression of a single sound-source for these instruments, thereby maintaining the integrity of the spatial distribution of sound as it corresponds to the placement of each performer on stage.

PREPARATION OF THE AMPLIFIED ALTO RECORDER, AND ITS 'FRACTALOUS' SONORITIES

On the "prepared" alto recorder (which is employed only within sections 1 and 2 of **Lines of Light: Seven Improvisations on *αιθερος μελος***), it is imperative that the bore's endpoint, at the footjoint's endhole, be closed *absolutely airtight*. I recommend the adhesion of a flat lozenge of "Blutac", "Bostik", "Plasticine", or some other malleable gummy substance to the bell, covering over the endhole completely. Such a preparation modifies the timbral, dynamic, and intonational response of the instrument; pitches somewhat below the alto recorder's regular gamut can be generated as well.

For each of the prepared alto recorder's 'fractalous' sonorities in sections 1 and 2, all pitches between a pair of bold orthogonal brackets **[ ]** manifest themselves as distinct vibrational modes of a *single fingering*: hence, no finger-movement whatsoever should take place prior to progressing on to the next sonority! However, as a direct outcome of engaging the randomized parameters given within these sections, compel these orthogonally-bracketed pitches to 'crack' upwards or downwards, flickering chaotically between and through several vibrational modes and multiphonic component tones. The overall impression of these complex coruscative objects should therefore be one of *volatile instability* – a locally unpredictable 'acoustic fractal'.

All orthogonally-bracketed sets of prepared alto recorder pitches from sections 1 and 2 have been assigned a *ringed ordinal number*; the duration of these 'fractalous' pitch-sets within each bar is, however, left to the discretion of the recorder-player – subject only to the condition that each specified bar-length must be maintained.

ARTICULATION

All articulation – *legato*, *tenuto*, *portato*, *mezzo staccato*, *staccato*, etc. – should be strictly observed. The following special recorder articulations are also utilized in **Lines of Light: Seven Improvisations on *αιθερος μελος***:


denotes *sputato* – a noisy, exaggerated, 'dirty' overblown attack.

denotes a compulsory *alveolar plosive attack*, utilizing the phoneme 't' (as in "tiger"), necessary to secure the multiphonic pitches.

denotes an *aspirated attack*, using the phoneme 'h' (as in "hamster"): the sonority is to be rendered *without any tonguing whatsoever*. When this articulation is underpinned by an accent, the aspiration is intensified so that it becomes a *diaphragm thrust*.


denotes *fluttertonguing*, a trilling of the tongue-tip against the alveolar ridge, or alternatively, a trilling of the back of the tongue against the uvula (soft palate) – as in gargling. Either type of fluttertonguing – alveolar or uvular – is acceptable throughout **Lines of Light**: the type, speed, and intensity of the fluttertonguing to be employed at each occurrence is left to the discretion of the recorder-player.


denotes a *tongue-tremolo*. Articulate, *as quickly and as evenly as possible*, the (double-tonguing) phonemes '[d]idl(d)idl(d)idl...' – as in "middle" – or the much more common (double-tonguing) pattern '[t]eketeke...' ('[d]egedege...'). The type and intensity of the tongue-tremolo to be employed at each occurrence throughout **Lines of Light** is left to the discretion of the recorder-player.

RECORDER FINGERINGS

Research of fingering-resources for **Lines of Light: Seven Improvisations on *αιθερος μελος*** was carried out upon an ebony Moeck Rottenburgh alto recorder (prepared as described above), an ebony Moeck Rottenburgh soprano recorder, and an ebony Moeck Rottenburgh keyless tenor recorder. Every fingering-indication provided within the recorder part of **Lines of Light** *that supplies the notated pitch(es) accurately over the given duration* is to be strictly adhered to: any modifications of such fingerings are forbidden! But whenever a recorder fingering yields an unacceptably inaccurate outcome, or is acoustically untenable on a particular instrument, then the performer is at liberty to alter that fingering – subject to the proviso that the resultant recorder sonority matches, as closely as possible *in context*, the composer's original intention. (If no such fingering exists, then just do your best with the provided fingering.) Note that sometimes one elicits a stipulated pitch from the given fingering 'by inflection' with the breath, purely through an appropriate boosting or attenuation of breath-pressure.

QUARTERTONES AND OTHER MICROTONES

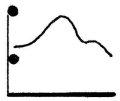
 and denote a *quartertone above* ♮, and a *quartertone below* ♮, respectively (i.e. 24-tone equal temperament). Arrowheads upon any accidentals denote slight intonational deviations – up to about an eighthtone, but not necessarily tempered – in the given direction.

MULTIPHONICS

Multiphonic notation in **Lines of Light: Seven Improvisations on *αιθερος μελος*** is necessarily incomplete: sidebands, such as 'difference tones', are excluded. Nevertheless,

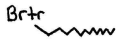
the pitches of the highest and lowest multiphonic component tones are carefully notated and should therefore be fairly accurate in performance. If, however, any *infinitesimal* pitch-discrepancies do occur in playing these multiphonics on your recorders, then they can be ignored! Unless otherwise specified, dynamic levels are unambiguously defined by the breath-requirements necessary to generate multiphonics such that their pair of constituent tones are *equally balanced*. Aside from such well-balanced multiphonics, the following multiple sonorities also occur:

denotes an *octave multiphonic* or a '*split octave*' (characterized notationally by a small open square above the stave). Using the normal fingering for the lowest (first-register) note of the notated octave, render its tone 'reedy' by augmenting the breath-pressure so that both octave pitches sound simultaneously, as part of a *rich, rattly, murky timbre* wherein the second partial is almost as strong as the fundamental. The presence of internal 'beating' or 'rattles' – caused by the mistuned octave – is indicated by the wavy vertical squiggle to the right of the noteheads.



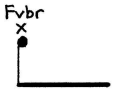
denotes a recorder multiphonic *spectral portamento contour*. In direct correspondence with the curve, augment and diminish your breath-pressure so as to cause a continuous shifting in the dynamic levels of (and balance between) the multiphonic's audible component tones. Each point along the curve therefore displays the relative (im)balance between these multiphonic pitches.

OTHER RECORDER TECHNIQUES



denotes a *breath trill*, whose pitch-oscillations and -fluctuations are generated entirely through breath- and throat-control, without any finger-movement whatsoever! (The vibrational modes within a 'breath trill' are always fairly unstable, and so respond quite readily to small changes in breath-pressure.)

denotes a (descending) *breath portamento*. Without any alteration of fingering whatsoever, permit the given pitch to fall down indeterminately, as your breath-pressure diminishes to nothing.



denotes a *fingervibrato* together with *fingerslapping* (repeatedly slapping the indicated fingers down, as hard as possible, onto their fingerholes). Its fingering and trilling action are specified by the tablature pictograph below the stave, wherein each × signifies a slapping finger.

RANDOMIZED PARAMETERS WITHIN THE AMPLIFIED RECORDERS' PART

The randomized parameters, listed below in the order in which they appear within the amplified recorders' part, are:

Section 1

Randomize: {the (s)pacing of events (i.e. their speed and density); "breath trills", alternations between *fluttertonguing* and *tongue-tremolo*; normal articulations (e.g. *staccato*, *portato*, *legato*), air-flow such that the indicated tones may sound}

Section 2

Set 1 – Randomize: {alternations of the given fingerings; air-flow (such that the given pitches are elicited *mostly in legato*)}

Set 2 – Randomize: {alternations between *fluttertonguing* and *tongue-tremolo*}

Set 3 – +Rand {air-flow (such that the given pitches are elicited)}

Sets 4, 7, 11 & 12 – Randomize parameters exactly as in section 1

Sets 5 & 8 – End Rand

Set 6 – Randomize: {alternations between *fluttertonguing* and *tongue-tremolo*; air-flow (such that the given pitches are elicited, but *mostly stable*)}

Set 9 – Randomize: {"breath trills", *tongue-tremolo*, normal articulations (e.g. *staccato*, *portato*, *legato*), air-flow (such that the given pitches are elicited)}

Set 10 – +Rand {some *fluttertonguing*}

The final gesture of Section 2, arising out of Set 12 – End Rand

Sections 3 & 5

Tacet!

Sections 4 & 7

End Rand

Section 6

Randomize: {*ppp*↔*p* (dynamic levels ranging between *ppp* and *p*)}

3. THE YAMAHA DX7 KEYBOARD SYNTHESIZERS: DETAILS

ON THE NUMBER OF KEYBOARDISTS

The part in **Lines of Light: Seven Improvisations on *αιθερος μελος*** for two Yamaha DX7 keyboard synthesizers (DX7 I = a Series I or a Series II instrument; DX7 II = a Series II instrument) can be performed perfectly well by just one keyboardist. However, since this work does embrace spontaneity as a compositional dimension, an even richer sonic result – texturally, timbrally, and musically – will be obtained by employing *two* keyboardists, each of them playing upon only one Yamaha DX7 synthesizer. Except for sections 4 and 7 (where DX7 I and DX7 II are clearly assigned separate rôles), I have deliberately written this part upon just two staves without specifying which synthesizer or voice is to produce any given note; indeed, the DX7s' voices are often subjected to 'randomization'. So, regardless of the number of keyboardists who have been engaged to play **Lines of Light**, in sections 1, 2, 3 and 5, the precise deployment of each Yamaha DX7 synthesizer within this part is left entirely to the discretion of the performer(s).

DYNAMIC INDICATIONS, ARTICULATION AND DURATIONS

Note that all dynamic indications within this part refer only to *key-velocity*: a foot controller pedal ('volume pedal') connected to each Yamaha DX7 synthesizer regulates the global output volume for each keyboard. Similarly, all durations and articulations (from *staccatissimo* to *tenuto*) within this part merely define the time over which keys, or a foot switch pedal ('sustain pedal', for sustain on/off), are *depressed*, but not necessarily the duration of the sound itself – which may well be heard ringing on beyond the release of keys or sustain pedals.

THE YAMAHA DX7 SYNTHESIZERS' VOICES

All twelve Yamaha DX7 synthesizer voices that arise throughout **Lines of Light: Seven Improvisations on *αιθερος μελος*** were created by the composer; the parametric data for each of these voices is appended to these Performance Notes. I have also included a 'null voice' therein, for use on the Yamaha DX7 Series I [DX7 I]: in order to prevent any highly

undesirable 'after-resonance' on this synthesizer when executing a voice-change at the end of a section, do please switch to the 'null voice' first to eliminate all sound. (Such an action will not be necessary on the Yamaha DX7 Series II [DX7 II], upon which one can perform immediate, 'clean' voice-changes.)

The following table summarizes the dissemination of all twelve of my Yamaha DX7 synthesizer voices that I have employed throughout **Lines of Light**:

Section	Yamaha DX7 I (Series I or II) Voice(s)	Yamaha DX7 II (Series II) Voice(s)
1	"Bowed Crot"	"VibeSizzle"
2	Both DX7s: "Clay Pot", "Dabachi 2", "Dabachi 4", "Dabachi 6": a free choice among these, including various combinations of these voices (any or all); on the DX7 II, the application of its 'split-key' capability or its simultaneity of voices is permitted. (Alternatively, other voices from amongst my twelve original DX7 voices listed herein – such as "VibeSizzle" or "Bowed Crot" – may be selected, for the sake of timbral unity...)	
3	"Dabachi 3"	"Chimes 1"
4	"VibeSizzle"	'**Split-key**': "Dabachi 4" (C♮1 – F♯3) & "Dabachi 2" (G♮3 – C♮6); or other voices...
5	"LowHollow1"	"Dabachi 5" (or other voices...)
6	Tacet!	Tacet!
7	"LowHollow2"	'**Split-key**': "Bowed Crot" (C♮1 – B♮3) & "Vibesizz" (C♮4 – C♮6) *

* NB: "Vibesizz" is distinct from "VibeSizzle"!

RANDOMIZED PARAMETERS WITHIN THE YAMAHA DX7 KEYBOARD SYNTHESIZERS' PART

The randomized parameters, listed below in the order in which they appear within the Yamaha DX7 keyboard synthesizers' part, are:

Section 1

Randomize: {voice (i.e. the choice of keyboard), (multi)octave transpositions, the addition of unspecified material, the (s)pacing of events (i.e. their speed and density); textures (e.g. single tones, chords, grace-note groups, arpeggiation, tremoli...) – *including tremolandi (ca.40% of the time)*; durations of key-depression, the depression and release of the sustaining pedal; key-velocities (*ppp*↔*fff*) – *these last three parameters interacting so that the sound-level never rises above 'mp'*}

Section 2

Randomize: {the selection of DX7 voices, (multi)octave transpositions; durations of key-depression, the depression and release of the sustaining pedal; key-velocities (*ppp*↔*ff*)}

Section 3

Randomize: {voice (i.e. the choice of keyboard) – *but biased somewhat towards DX7 II*, (multi)octave transpositions, *the addition of unspecified material*, the (s)pacing of events (i.e. their speed and density); textures (e.g. single tones, chords, grace-note groups, arpeggiation, tremoli...), durations of key-depression, the depression and release of the sustaining pedal; key-velocities (*ppp*↔*f*)}

–Rand {the addition of unspecified material}

+Rand {the addition of unspecified material}

Section 4

DX7 I – End Rand

DX7 II – Randomize: {(multi)octave transpositions; the addition of unspecified material and/or the deletion of given material, the (s)pacing of events (i.e. their speed and density); textures (e.g. single tones, chords, grace-note groups, arpeggiation, tremoli...); durations of key-depression, the depression and release of the sustaining pedal}

DX7 II – *Optional:* End Rand {the addition of unspecified material}

Section 5

Randomize: {voice (i.e. the choice of keyboard), (multi)octave transpositions, the addition of unspecified material and/or the deletion of given material; the (s)pacing of events (i.e. their speed and density); textures (e.g. single tones, chords, grace-note groups, arpeggiation, tremoli...); *manipulations of the pitch-wheel (maximum range up = maximum range down = one semitone)*; durations of key-depression, the depression and release of the sustaining pedal; key-velocities (*ppp*↔*fff*)}

Optional: Randomize {the pressing down and lifting up of the volume pedals}

End Rand {(multi)octave transpositions}

DX7 II – Beautiful and interesting results may be obtained by experimenting with this keyboard's *microtonal* capabilities – through the activation, transformation, and neutralization of any of the Yamaha DX7 Series II's microtonal keyboard settings (i.e. equal-tempered microtones, or unequal [historical] temperaments)...

Section 6

Tacet!

Section 7

End Rand

4. THE METALLIC PERCUSSION INSTRUMENTS: DETAILS

ON THE NUMBER OF PERCUSSIONISTS

The part in **Lines of Light: Seven Improvisations on *αιθερος μελος*** for metallic percussion instruments can be performed perfectly well by just a single percussionist. However, since this piece does embrace spontaneity as a compositional dimension, an even richer sonic result – texturally, timbrally, and musically – will be obtained by employing *two* percussionists. In this situation, I entrust the disentangling of the percussion part (i.e. the apportionment of the percussion instruments between the two players) to the percussionists themselves, who will then need to modify the given instrumental layout accordingly.

ARTICULATION

denotes a '*deadstick*'. Once the mallet has struck a sound-producer of a percussion instrument, it remains in physical contact with the strike-point, without rebounding, thereby muffling or damping any after-resonance. The resultant sound's envelope will thus be a fairly brief 'choked' staccato.

denotes *damping* a sound-producer of a percussion instrument – by hand, or with a mallet – *to silence* after it has been struck. The precise shape of the sound's envelope will therefore depend upon the time elapsed between striking thence damping the sound-producer: throughout **Lines of Light**, this musical factor is left entirely to the discretion of the percussionist(s).

GLISSANDI ON THE TUBULAR BELLS

Throughout **Lines of Light: Seven Improvisations on *αιθερος μελος***, all *glissandi* carried out on the set of tubular bells take place only upon those tubes corresponding to the diatonic ('natural') notes – sweeping either downwards from F♮4, or upwards from C♮3. Neither the initial (parenthesized) pitch nor the final pitch of such glissandi should be accentuated or individually attacked; moreover, these final pitches are never actually specified, so that all glissando ranges herein are open-ended. Most glissandi on the tubular bells should, however, traverse at least an octave or thereabouts, as implied by their graphic notation. Although governed by the prevailing dynamic indications, the exact *speed of execution* of each glissando across the tubular bells is left to the discretion of the executant.

VIBRAPHONE VIBRATO

Rates of vibrato on the vibraphone are specified by *ringed numbers*: ⓪ indicates *non-vibrato* (i.e. 'motor off'); ⑥ signifies the vibraphone's maximum vibrato-frequency; ① and ② ≈ 'slow' vibrati; ③ and ④ ≈ 'medium' vibrati; and ⑤ ≈ a 'fast' vibrato. Between the extremes of ⓪ and ⑥, the numbers ①, ②, ③, ④, and ⑤ denote *approximately* equal gradations of vibrato-rate; hence, each of these numbers is perhaps best thought of as a narrow *bandwidth* of vibrato-frequencies, so that ③ (for example) does not designate a precise, fixed rate of vibrato for each of its occurrences.

When the vibraphone's motor is *turned off* (i.e. to ⓪: non-vibrato) before beginning section 6, do please remember also to rotate the vibrato-discs at the top of the instrument's resonators to their vertical position – in order to capture the vibraphone's maximum degree of sonorousness throughout section 6.

Smooth transitions between numbered rates of vibrato (i.e. *vibrato accelerandi* or *vibrato rallentandi*) are depicted by appropriately sloping *dashed lines* which connect the ring around one vibrato number to that around the next.

It is most probably advantageous to employ an assistant whose sole purpose will be to manipulate the vibraphone's potentiometer, and thus regulate its rate of vibrato.

MALLETS

The following pictographs illustrate the different types of percussion mallet called for throughout **Lines of Light: Seven Improvisations on *αιθερος μελος***. Drawn together in various combinations, such pictographs show the number, type, and deployment between the left and right hands of mallets required over each section of the music. Usage of the 'plus' and 'minus' symbols (+, –) in this context indicates a straightforward change from the basic mallet-configuration.

In relation to certain metallic percussion instruments (such as the autocoil and the Chinese bell tree), a mallet pictograph marked "sempre" means that throughout the given section, only the indicated mallet-type should be used to elicit sound from this instrument.

denotes a soft vibraphone mallet.

denotes a yarn-wound vibraphone mallet of medium hardness.

denotes a very hard plastic or heavy brass glockenspiel mallet.

denotes a high-quality wound leather hammer for the tubular bells.

denotes a 'composite hammer' for the tubular bells: i.e. a normal leather hammer (as described above), plus some sort of heavy metal mallet for striking the tubes front-on (below their caps). The heavy metal mallet may be held separately in the hand, or instead, it can be attached to the leather hammer somehow; alternatively, a hard metal washer or coin could be adhered to one end of the leather hammer!

denotes an authentic hard wooden rin *beater (<u>absolutely not</u> the soft, suede- or kidskin-bound variety); such beaters usually accompany the* rin *themselves. This quite rare type of beater resembles a short wooden rod, about 150 mm long, wrapped lightly with thin colourful cloth: if it is unavailable, then substitute an ordinary hard wooden or hard plastic mallet instead.*

PERCUSSION INSTRUMENTS: DETAILED DESCRIPTIONS AND ABBREVIATIONS

Within the percussion part from **Lines of Light: Seven Improvisations on *αιθερος μελος***, all of the metallic percussion instruments are notated *in sequential order according to their physical distribution*; they are listed below in the same fashion.

Tubular Bells: <u>Tub Bells</u>

*Range: C♯3 — F♯4. A high-quality (chromatic) set of tubular bells is required. Note that **Lines of Light: Seven Improvisations on αιθερος μελος** does not call for any pedalling of the tubular bells whatsoever: just lock the instrument's sustaining pedal down fully (or instead secure it with a brick or cinder block) for the entire duration of the piece, thereby allowing all tubular bells to resonate freely – ringing on indefinitely after being struck.*

7 Japanese Temple Bells (*Rin*): <u>Rin</u>

*Seven small- to medium-sized Japanese 'cup bells' (*rin*), resting upon their traditional cushions, which radiate extremely beautiful, resonant, sparkling, microtonal bell-sounds – all of them exhibiting very long decay-times. The seven* rin *utilized for the world première performance of **Lines of Light: Seven Improvisations on αιθερος μελος** were pitched as follows: **1** – B𝄲4; **2** – A𝄲4; **3** – A♮4; **4** – G𝄲4; **5** – D♭4; **6** – B𝄩3; **7** – G𝄳3. These particular micro-intonations within my set of seven* rin *here were very much in my 'mind's ear' throughout the composition of **Lines of Light**; it is, therefore, highly desirable (if not obligatory) that instruments which conform as closely as possible to these tunings be procured!*

Chinese Bell Tree: <u>CBT</u>

A nested set of microtonal bells, strung together on a rod in order of size. Upward and downward glissandi – as well as their relative speeds and approximate starting positions – are notated graphically, as usual.

Large Autocoil: <u>Coil</u>

A large helical spring, from the front-end suspension of a car, hung up high by a leather bootlace. An arrow to the left of a notehead indicates a sweeping rasp-like 'arpeggiando' attack (either upwards or downwards) that dramatically runs along the whole length of the helix, striking most (or all) loops in rapid succession; otherwise, for the coil's normal mode of performance, tap just a single loop.

'Triangle Windchime': <u>△WC</u> *

Three triangles of different size/pitch – i.e. small, medium, and large triangles – grouped together (as a windchime) in such a way that each triangle bangs against the others without losing much of its natural resonance.

2 (or more) Brass Tube Windchimes: Metal Tube WC *

1 *– About twenty or so medium to small thick brass tubes (outer diameter ca.6-10 mm, maximum length ca.330 mm), sounding within the range F♯4 — C♮7: brilliant, starry, cutting, high-pitched; ca.15" decay.*

2 *– About ten or so large brass tubes (outer diameter ca.18-25 mm, maximum length ca.610 mm), sounding approximately within the range E♮3 — A♮4: brilliant, cutting, rather like small tubular bells; ca.20" decay.*

Note that within ***Lines of Light: Seven Improvisations on αιθερος μελος****, these brass-tube windchimes are played just once, in section 2!*

Crotales: Crot

Written range: C♮3 — C♮4, sounding two octaves higher than notated. The thirteen crotali should be rack-mounted, in the manner of a keyboard.

Vibraphone: Vib

Range: F♮2 — F♮5. A high-quality modern instrument (with wide bars in its low register) is required. The vibraphone must also be equipped with an electric motor and potentiometer that will yield a continuously variable speed of vibrato – widely ranging from 'slow' to 'fast'; a vibrato on/off capability, activated either by a switch or by the potentiometer, is needed as well.

NB: although it is suggested merely as an option, it could well prove beneficial to engage in performance an assistant to manipulate the vibraphone's potentiometer.

*** Windchimes**

Agitate the elements of these windchimes directly, with hand(s) or mallet(s), roughly in accord with the notated waveform contours. All windchime attacks and excitations should be varied as much as possible, subject to the indicated dynamic levels (if any).

RANDOMIZED PARAMETERS WITHIN THE PERCUSSION PART

The randomized parameters, listed below in the order in which they appear within the percussion part, are:

Section 1

Randomize: {the addition of unspecified material, the (s)pacing of events (i.e. their speed and density); textures (e.g. single tones, chords, grace-note groups, arpeggiation, tremoli...) – *including tremolandi (ca.40% of the time)*; *ppp*↔*mp* (dynamic levels ranging between *ppp* and *mp*); 'deadsticking' and damping-to-silence – both less than 10% of the time}

Vibraphone – Randomize: {the rate of vibrato within the range ②↔⑤; the release of the sustaining pedal less than 10% of the time – so, very resonant}

Section 2

Randomize: {the durations between successive notes (up to a maximum duration of approximately three seconds); 'deadsticking', damping-to-silence, the depression and release of the vibraphone's sustaining pedal; *ppp*↔*fff* (dynamic levels ranging between *ppp* and *fff*)}

Section 3

Tubular Bells – Randomize: {*the addition of unspecified material*, the (s)pacing of events (i.e. their speed and density); textures (e.g. single tones, chords, grace-note groups, arpeggiation, tremoli...); *alternations between striking the tubular bells with wound-leather hammer(s) and striking the tubular bells with heavy metal mallet(s) (using the 'composite hammers')*; 'deadsticking' and damping-to-silence – both less than 25% of the time; *ppp*↔*fff* (dynamic levels covering the *full range* between *ppp* and *fff*)}

Section 4

Randomize: {the addition of unspecified material and/or the deletion of given material, the (s)pacing of events (i.e. their speed and density); textures (e.g. single tones, chords, grace-note groups, arpeggiation, tremoli...); *ppp*↔*fff* (dynamic levels ranging between *ppp* and *fff*)}

Crotales – Randomize: {'deadsticking' and damping-to-silence – both less than 25% of the time}

Vibraphone – Randomize: {the rate of vibrato within the range ①↔⑥ – *but only one motor-setting per bar*}

Section 5

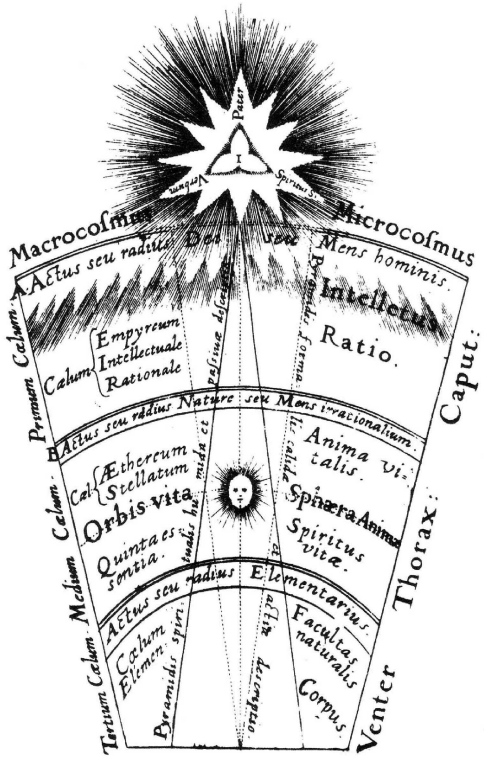
Tacet!

Section 6

Randomize: {*ppp*↔*p* (dynamic levels ranging between *ppp* and *p*)}

Section 7

End Rand



VOICE DATA for the Yamaha DX7 Keyboard Synthesizers

VOICE NAME: *Bowed Crot*

Created by: Ian Shanahan

Sections that require this voice in "Lines of Light"

DX7 I: 1, 2 (possibly)
DX7 II: 2 (possibly), 7

Algorithm: 05 **Feedback:** 1 **Key Transpose:** C2

Pitch Modulation Sensitivity: 1 **Oscillator Synchronization:** On

LFO:	**Wave**	**Speed**	**Delay**	**PMD**	**AMD**	**Sync**
	Triangle	20	91	08	00	On

	Operator 1	**Operator 2**	**Operator 3**	**Operator 4**	**Operator 5**	**Operator 6**
Ampl. Mod. Sens.:	0	0	0	0	0	0
Mode:	Ratio	Ratio	Ratio	Ratio	Ratio	Ratio
Frequency:	02.00	13.00	02.00	13.00	02.00	13.00
Detune:	+3	–3	+0	+1	–7	+7
EG Rate 1:	39	76	39	75	39	74
EG Rate 2:	31	20	32	22	39	28
EG Rate 3:	13	14	15	15	47	30
EG Rate 4:	33	19	32	18	37	39
EG Level 1:	99	99	99	99	99	99
EG Level 2:	73	63	75	67	72	66
EG Level 3:	00	00	00	00	00	00
EG Level 4:	00	00	00	00	00	00
Keyboard Level Scaling						
Break Pt.:	A–1	A–1	A–1	A–1	A–1	A–1
Curve L:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Curve R:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Depth L:	00	00	00	00	00	00
Depth R:	00	00	00	00	00	00
Kbd. Rate Scaling:	0	2	0	2	1	3
Op. Outpt. Level:	99	99	99	99	99	99
K. Velocity Sens.:	4	2	4	2	7	5

Pitch EG

Rate 1: 99 **Level 1:** 50
Rate 2: 99 **Level 2:** 50
Rate 3: 99 **Level 3:** 50
Rate 4: 99 **Level 4:** 50

Poly/Mono: Poly

Pitch Bend:	**Range**	**Step**
	01	00

Portamento:	**Mode**	**Glissando**	**Time**
	Sus-Key P Retain	Off	00

	Range	**Pitch**	**Amplitude**	**EG Bias**
Modulation Wheel:	00	Off	Off	Off
Foot Control:	00	Off	Off	Off
Breath Control:	00	Off	Off	Off
Aftertouch:	00	Off	Off	Off

VOICE NAME: *VibeSizzle*

Created by: Ian Shanahan

Sections that require this voice in "Lines of Light"

DX7 I: 2 (possibly), 4
DX7 II: 1, 2 (possibly)

Algorithm: 29 **Feedback:** 3 **Key Transpose:** A1

Pitch Modulation Sensitivity: 1 **Oscillator Synchronization:** On

LFO: Wave	Speed	Delay	PMD	AMD	Sync
Sine	14	99	13	12	On

	Operator 1	Operator 2	Operator 3	Operator 4	Operator 5	Operator 6
Ampl. Mod. Sens.:	0	0	0	1	0	0
Mode:	Ratio	Ratio	Ratio	Ratio	Ratio	Ratio
Frequency:	04.71	04.71	02.00	13.00	02.00	13.00
Detune:	+3	–2	–3	+0	+3	–4
EG Rate 1:	58	61	18	79	39	83
EG Rate 2:	00	38	22	16	22	13
EG Rate 3:	21	19	27	15	28	14
EG Rate 4:	27	28	29	21	29	20
EG Level 1:	99	99	94	99	99	99
EG Level 2:	99	86	67	81	67	82
EG Level 3:	00	00	00	00	00	00
EG Level 4:	00	00	00	00	00	00
Keyboard Level Scaling						
Break Pt.:	A–1	A–1	A–1	A–1	A–1	A–1
Curve L:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Curve R:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Depth L:	00	00	00	00	00	00
Depth R:	00	00	00	00	00	00
Kbd. Rate Scaling:	2	0	0	4	0	4
Op. Outpt. Level:	99	99	80	99	79	99
K. Velocity Sens.:	4	4	4	1	4	1

Pitch EG
Rate 1: 99 **Level 1:** 50
Rate 2: 99 **Level 2:** 50
Rate 3: 99 **Level 3:** 50
Rate 4: 99 **Level 4:** 50

Poly/Mono: Poly

Pitch Bend:	Range	Step
	01	00

Portamento:	Mode	Glissando	Time
	Sus-Key P Retain	Off	00

	Range	Pitch	Amplitude	EG Bias
Modulation Wheel:	00	Off	Off	Off
Foot Control:	00	Off	Off	Off
Breath Control:	00	Off	Off	Off
Aftertouch:	00	Off	Off	Off

VOICE NAME: *Clay Pot*

Created by: Ian Shanahan

Sections that require this voice in "Lines of Light"

DX7 I: 2 (either DX7)
DX7 II: 2 (either DX7)

Algorithm: 05 **Feedback:** 0 **Key Transpose:** E3

Pitch Modulation Sensitivity: 1 **Oscillator Synchronization:** On

LFO: Wave	Speed	Delay	PMD	AMD	Sync
Triangle	19	47	16	00	On

	Operator 1	Operator 2	Operator 3	Operator 4	Operator 5	Operator 6
Ampl. Mod. Sens.:	0	0	0	0	0	0
Mode:	Ratio	Ratio	Ratio	Ratio	Ratio	Ratio
Frequency:	01.57	04.23	01.57	04.23	01.57	04.23
Detune:	–5	+5	+3	–3	–2	+1
EG Rate 1:	81	85	79	84	83	80
EG Rate 2:	51	47	50	46	45	51
EG Rate 3:	35	36	34	35	36	33
EG Rate 4:	43	35	42	34	41	26
EG Level 1:	99	99	99	99	99	99
EG Level 2:	75	71	74	72	73	75
EG Level 3:	00	00	00	00	00	00
EG Level 4:	00	00	00	00	00	00
Keyboard Level Scaling						
Break Pt.:	A–1	A–1	A–1	A–1	A–1	A–1
Curve L:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Curve R:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Depth L:	00	00	00	00	00	00
Depth R:	00	00	00	00	00	00
Kbd. Rate Scaling:	0	0	0	0	0	0
Op. Outpt. Level:	99	71	99	70	99	70
K. Velocity Sens.:	4	4	4	4	4	4

Pitch EG
Rate 1: 99 **Level 1:** 50
Rate 2: 99 **Level 2:** 50
Rate 3: 99 **Level 3:** 50
Rate 4: 99 **Level 4:** 50

Poly/Mono: Poly

Pitch Bend:	Range	Step
	01	00

Portamento:	Mode	Glissando	Time
	Sus-Key P Retain	Off	00

	Range	Pitch	Amplitude	EG Bias
Modulation Wheel:	00	Off	Off	Off
Foot Control:	00	Off	Off	Off
Breath Control:	00	Off	Off	Off
Aftertouch:	00	Off	Off	Off

VOICE NAME: *Dabachi 2*

Created by: Ian Shanahan

Sections that require this voice in "Lines of Light"

DX7 I: 2 (either DX7)
DX7 II: 2 (either DX7), 4

Algorithm: 29 **Feedback:** 5 **Key Transpose:** C3

Pitch Modulation Sensitivity: 1 **Oscillator Synchronization:** On

LFO: Wave	Speed	Delay	PMD	AMD	Sync
Sine	21	54	17	00	On

	Operator 1	Operator 2	Operator 3	Operator 4	Operator 5	Operator 6
Ampl. Mod. Sens.:	0	0	0	0	0	0
Mode:	Ratio	Ratio	Ratio	Ratio	Ratio	Ratio
Frequency:	02.00	03.14	02.00	03.46	02.00	03.46
Detune:	–1	+0	+4	–6	+2	–1
EG Rate 1:	86	61	77	80	77	80
EG Rate 2:	00	48	00	00	00	00
EG Rate 3:	39	41	40	36	40	36
EG Rate 4:	41	43	42	35	42	35
EG Level 1:	99	99	99	99	99	99
EG Level 2:	99	86	99	99	99	99
EG Level 3:	00	00	00	00	00	00
EG Level 4:	00	00	00	00	00	00
Keyboard Level Scaling						
Break Pt.:	A–1	A–1	A–1	A–1	A–1	A–1
Curve L:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Curve R:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Depth L:	00	00	00	00	00	00
Depth R:	00	00	00	00	00	00
Kbd. Rate Scaling:	0	0	0	0	0	0
Op. Outpt. Level:	99	87	99	70	99	70
K. Velocity Sens.:	4	4	4	4	4	4

Pitch EG
Rate 1: 99 **Level 1:** 50
Rate 2: 99 **Level 2:** 50
Rate 3: 99 **Level 3:** 50
Rate 4: 99 **Level 4:** 50

Poly/Mono: Poly

Pitch Bend:	Range	Step
	01	00

Portamento:	Mode	Glissando	Time
	Sus-Key P Retain	Off	00

	Range	Pitch	Amplitude	EG Bias
Modulation Wheel:	00	Off	Off	Off
Foot Control:	00	Off	Off	Off
Breath Control:	00	Off	Off	Off
Aftertouch:	00	Off	Off	Off

VOICE NAME: *Dabachi 4*

Created by: Ian Shanahan

Sections that require this voice in "Lines of Light"

DX7 I: 2 (either DX7)
DX7 II: 2 (either DX7), 4

Algorithm: 05 **Feedback:** 4 **Key Transpose:** C3

Pitch Modulation Sensitivity: 1 **Oscillator Synchronization:** On

LFO: Wave	Speed	Delay	PMD	AMD	Sync
Sine	08	81	25	00	On

	Operator 1	Operator 2	Operator 3	Operator 4	Operator 5	Operator 6
Ampl. Mod. Sens.:	0	0	0	0	0	0
Mode:	Ratio	Ratio	Ratio	Ratio	Ratio	Ratio
Frequency:	02.00	03.14	02.00	03.14	02.00	03.14
Detune:	+0	–5	–2	+1	+3	–3
EG Rate 1:	32	40	66	67	67	70
EG Rate 2:	23	19	22	21	23	19
EG Rate 3:	28	28	25	32	28	28
EG Rate 4:	30	13	17	33	30	13
EG Level 1:	99	99	99	99	99	99
EG Level 2:	86	87	68	88	86	87
EG Level 3:	00	00	00	00	00	00
EG Level 4:	00	00	00	00	00	00
Keyboard Level Scaling						
Break Pt.:	A–1	A–1	A–1	A–1	A–1	A–1
Curve L:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Curve R:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Depth L:	00	00	00	00	00	00
Depth R:	00	00	00	00	00	00
Kbd. Rate Scaling:	4	4	7	4	4	4
Op. Outpt. Level:	90	76	99	77	99	78
K. Velocity Sens.:	7	7	4	4	4	4

Pitch EG
Rate 1: 99 **Level 1:** 50
Rate 2: 99 **Level 2:** 50
Rate 3: 99 **Level 3:** 50
Rate 4: 99 **Level 4:** 50

Poly/Mono: Poly

Pitch Bend:	Range	Step
	01	00

Portamento:	Mode	Glissando	Time
	Sus-Key P Retain	Off	00

	Range	Pitch	Amplitude	EG Bias
Modulation Wheel:	00	Off	Off	Off
Foot Control:	00	Off	Off	Off
Breath Control:	00	Off	Off	Off
Aftertouch:	00	Off	Off	Off

VOICE NAME: *Dabachi 6*

Created by: Ian Shanahan

Sections that require this voice in "Lines of Light"

DX7 I: 2 (either DX7)
DX7 II: 2 (either DX7)

Algorithm: 32 **Feedback:** 4 **Key Transpose:** C3

Pitch Modulation Sensitivity: 1 **Oscillator Synchronization:** On

LFO: Wave	Speed	Delay	PMD	AMD	Sync
Triangle	25	73	18	00	On

	Operator 1	Operator 2	Operator 3	Operator 4	Operator 5	Operator 6
Ampl. Mod. Sens.:	0	0	0	0	0	0
Mode:	Ratio	Ratio	Ratio	Ratio	Ratio	Ratio
Frequency:	03.14	03.46	03.14	03.46	02.00	02.00
Detune:	+3	+1	–2	–1	–3	+2
EG Rate 1:	73	80	73	80	70	77
EG Rate 2:	43	38	43	38	42	45
EG Rate 3:	32	29	32	29	42	39
EG Rate 4:	42	41	42	41	43	44
EG Level 1:	99	99	99	99	99	99
EG Level 2:	92	93	92	93	87	86
EG Level 3:	00	00	00	00	00	00
EG Level 4:	00	00	00	00	00	00
Keyboard Level Scaling						
Break Pt.:	A–1	A–1	A–1	A–1	A–1	A–1
Curve L:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Curve R:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Depth L:	00	00	00	00	00	00
Depth R:	00	00	00	00	00	00
Kbd. Rate Scaling:	0	0	0	0	0	0
Op. Outpt. Level:	99	87	99	88	99	99
K. Velocity Sens.:	4	4	4	4	4	4

Pitch EG
Rate 1: 99 **Level 1:** 50
Rate 2: 99 **Level 2:** 50
Rate 3: 99 **Level 3:** 50
Rate 4: 99 **Level 4:** 50

Poly/Mono: Poly

Pitch Bend:	Range	Step
	01	00

Portamento:	Mode	Glissando	Time
	Sus-Key P Retain	Off	00

	Range	Pitch	Amplitude	EG Bias
Modulation Wheel:	00	Off	Off	Off
Foot Control:	00	Off	Off	Off
Breath Control:	00	Off	Off	Off
Aftertouch:	00	Off	Off	Off

VOICE NAME: *Dabachi 3*

Created by: Ian Shanahan

Sections that require this voice in "Lines of Light"

DX7 I: 3
DX7 II: –

Algorithm: 32 **Feedback:** 2 **Key Transpose:** C1

Pitch Modulation Sensitivity: 1 **Oscillator Synchronization:** On

LFO: Wave	Speed	Delay	PMD	AMD	Sync
Sine	10	87	24	00	On

	Operator 1	Operator 2	Operator 3	Operator 4	Operator 5	Operator 6
Ampl. Mod. Sens.:	0	0	0	0	0	0
Mode:	Ratio	Ratio	Ratio	Ratio	Ratio	Ratio
Frequency:	04.00	04.00	09.87	09.87	09.87	04.00
Detune:	+0	–7	+0	+2	–1	+4
EG Rate 1:	72	77	77	73	75	75
EG Rate 2:	28	30	28	30	29	29
EG Rate 3:	34	31	33	30	32	32
EG Rate 4:	42	38	40	38	39	39
EG Level 1:	99	99	99	99	99	99
EG Level 2:	70	70	70	70	70	70
EG Level 3:	00	00	00	00	00	00
EG Level 4:	00	00	00	00	00	00
Keyboard Level Scaling						
Break Pt.:	A–1	A–1	A–1	A–1	A–1	A–1
Curve L:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Curve R:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Depth L:	00	00	00	00	00	00
Depth R:	00	00	00	00	00	00
Kbd. Rate Scaling:	4	4	2	2	2	4
Op. Outpt. Level:	99	99	99	99	99	99
K. Velocity Sens.:	4	7	4	4	7	4

Pitch EG
Rate 1: 99 **Level 1:** 50
Rate 2: 99 **Level 2:** 50
Rate 3: 99 **Level 3:** 50
Rate 4: 99 **Level 4:** 50

Poly/Mono: Poly

Pitch Bend:	Range	Step
	01	00

Portamento:	Mode	Glissando	Time
	Sus-Key P Retain	Off	00

	Range	Pitch	Amplitude	EG Bias
Modulation Wheel:	00	Off	Off	Off
Foot Control:	00	Off	Off	Off
Breath Control:	00	Off	Off	Off
Aftertouch:	00	Off	Off	Off

VOICE NAME: *Chimes 1*

Created by: Ian Shanahan

Sections that require this voice in "Lines of Light"

DX7 I: –
DX7 II: 3

Algorithm: 29 **Feedback:** 2 **Key Transpose:** G♯ 1

Pitch Modulation Sensitivity: 1 **Oscillator Synchronization:** On

LFO: Wave	Speed	Delay	PMD	AMD	Sync
Triangle	11	82	10	99	Off

	Operator 1	Operator 2	Operator 3	Operator 4	Operator 5	Operator 6
Ampl. Mod. Sens.:	0	3	0	0	0	0
Mode:	Ratio	Ratio	Ratio	Ratio	Ratio	Ratio
Frequency:	02.50	02.50	07.00	02.82	07.00	02.82
Detune:	–5	–1	–3	+4	–5	+2
EG Rate 1:	58	54	86	78	86	78
EG Rate 2:	00	07	37	26	27	26
EG Rate 3:	21	19	41	35	26	35
EG Rate 4:	27	28	43	19	40	19
EG Level 1:	99	99	99	99	99	99
EG Level 2:	99	92	64	67	64	67
EG Level 3:	00	00	00	00	00	00
EG Level 4:	00	00	00	00	00	00
Keyboard Level Scaling						
Break Pt.:	A–1	A–1	A–1	A–1	A–1	A–1
Curve L:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Curve R:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Depth L:	00	00	00	00	00	00
Depth R:	00	00	00	00	00	00
Kbd. Rate Scaling:	2	2	2	4	2	4
Op. Outpt. Level:	99	99	99	81	99	81
K. Velocity Sens.:	4	4	4	4	4	4

Pitch EG

Rate 1: 99 **Level 1:** 50
Rate 2: 99 **Level 2:** 50
Rate 3: 99 **Level 3:** 50
Rate 4: 99 **Level 4:** 50

Poly/Mono: Poly

Pitch Bend:	Range	Step
	01	00

Portamento:	Mode	Glissando	Time
	Sus-Key P Retain	Off	00

	Range	Pitch	Amplitude	EG Bias
Modulation Wheel:	00	Off	Off	Off
Foot Control:	00	Off	Off	Off
Breath Control:	00	Off	Off	Off
Aftertouch:	00	Off	Off	Off

VOICE NAME: *LowHollow1*

Created by: Ian Shanahan

Sections that require this voice in "Lines of Light"

DX7 I: 5
DX7 II: –

Algorithm: 05 **Feedback:** 0 **Key Transpose:** E2

Pitch Modulation Sensitivity: 1 **Oscillator Synchronization:** On

LFO: Wave	Speed	Delay	PMD	AMD	Sync
Triangle	06	73	19	00	On

	Operator 1	Operator 2	Operator 3	Operator 4	Operator 5	Operator 6
Ampl. Mod. Sens.:	0	0	0	0	0	0
Mode:	Ratio	Ratio	Ratio	Ratio	Ratio	Ratio
Frequency:	00.78	05.00	00.78	05.00	00.78	05.00
Detune:	+3	–1	–4	+5	–2	+2
EG Rate 1:	76	79	75	78	72	80
EG Rate 2:	28	31	25	29	23	32
EG Rate 3:	29	15	31	14	28	13
EG Rate 4:	34	17	36	18	35	16
EG Level 1:	99	99	99	99	99	99
EG Level 2:	83	85	82	83	81	86
EG Level 3:	00	00	00	00	00	00
EG Level 4:	00	00	00	00	00	00
Keyboard Level Scaling						
Break Pt.:	A–1	A–1	A–1	A–1	A–1	A–1
Curve L:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Curve R:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Depth L:	00	00	00	00	00	00
Depth R:	00	00	00	00	00	00
Kbd. Rate Scaling:	0	0	0	0	0	0
Op. Outpt. Level:	99	86	99	85	99	84
K. Velocity Sens.:	4	4	4	4	4	4

Pitch EG

Rate 1: 99 **Level 1:** 50
Rate 2: 99 **Level 2:** 50
Rate 3: 99 **Level 3:** 50
Rate 4: 99 **Level 4:** 50

Poly/Mono: Poly

Pitch Bend:	Range	Step
	01	00

Portamento:	Mode	Glissando	Time
	Sus-Key P Retain	Off	00

	Range	Pitch	Amplitude	EG Bias
Modulation Wheel:	00	Off	Off	Off
Foot Control:	00	Off	Off	Off
Breath Control:	00	Off	Off	Off
Aftertouch:	00	Off	Off	Off

VOICE NAME: *Dabachi 5*

Created by: Ian Shanahan

Sections that require this voice in "Lines of Light"

DX7 I: –
DX7 II: 5

Algorithm: 31 **Feedback:** 4 **Key Transpose:** C2

Pitch Modulation Sensitivity: 1 **Oscillator Synchronization:** On

LFO: Wave	Speed	Delay	PMD	AMD	Sync
Triangle	19	91	18	00	On

	Operator 1	Operator 2	Operator 3	Operator 4	Operator 5	Operator 6
Ampl. Mod. Sens.:	0	0	0	0	0	0
Mode:	Ratio	Ratio	Ratio	Ratio	Ratio	Ratio
Frequency:	01.73	01.73	04.00	04.00	03.00	04.71
Detune:	–3	+7	+3	–6	+3	–2
EG Rate 1:	45	20	58	58	78	77
EG Rate 2:	40	46	00	65	31	32
EG Rate 3:	36	50	26	32	29	28
EG Rate 4:	42	42	30	36	31	30
EG Level 1:	99	68	99	99	99	99
EG Level 2:	67	40	99	72	68	69
EG Level 3:	00	00	00	00	00	00
EG Level 4:	00	00	00	00	00	00
Keyboard Level Scaling						
Break Pt.:	A–1	A–1	A–1	A–1	A–1	A–1
Curve L:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Curve R:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Depth L:	00	00	00	00	00	00
Depth R:	00	00	00	00	00	00
Kbd. Rate Scaling:	0	0	2	2	4	4
Op. Outpt. Level:	93	84	92	92	99	78
K. Velocity Sens.:	4	2	4	3	4	4

Pitch EG

Rate 1: 99 **Level 1:** 50
Rate 2: 99 **Level 2:** 50
Rate 3: 99 **Level 3:** 50
Rate 4: 99 **Level 4:** 50

Poly/Mono: Poly

Pitch Bend:	Range	Step
	01	00

Portamento:	Mode	Glissando	Time
	Sus-Key P Retain	Off	00

	Range	Pitch	Amplitude	EG Bias
Modulation Wheel:	00	Off	Off	Off
Foot Control:	00	Off	Off	Off
Breath Control:	00	Off	Off	Off
Aftertouch:	00	Off	Off	Off

VOICE NAME: *LowHollow2*

Created by: Ian Shanahan

Sections that require this voice in "Lines of Light"

DX7 I: 7
DX7 II: –

Algorithm: 05 **Feedback:** 2 **Key Transpose:** D♯1

Pitch Modulation Sensitivity: 1 **Oscillator Synchronization:** On

LFO: Wave	Speed	Delay	PMD	AMD	Sync
Triangle	15	88	10	00	On

	Operator 1	Operator 2	Operator 3	Operator 4	Operator 5	Operator 6
Ampl. Mod. Sens.:	0	0	0	0	0	0
Mode:	Ratio	Ratio	Ratio	Ratio	Ratio	Ratio
Frequency:	00.86	05.00	00.86	05.00	00.86	05.00
Detune:	+1	+7	–2	+2	+2	–1
EG Rate 1:	58	76	59	79	57	74
EG Rate 2:	39	15	33	13	38	00
EG Rate 3:	20	20	15	21	19	19
EG Rate 4:	30	22	26	27	34	17
EG Level 1:	99	99	99	99	99	99
EG Level 2:	88	95	94	92	86	99
EG Level 3:	00	00	00	00	00	00
EG Level 4:	00	00	00	00	00	00
Keyboard Level Scaling						
Break Pt.:	A–1	A–1	A–1	A–1	A–1	A–1
Curve L:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Curve R:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Depth L:	00	00	00	00	00	00
Depth R:	00	00	00	00	00	00
Kbd. Rate Scaling:	0	2	0	2	0	2
Op. Outpt. Level:	98	83	97	85	99	84
K. Velocity Sens.:	4	3	4	3	4	3

Pitch EG

Rate 1: 99 **Level 1:** 50
Rate 2: 99 **Level 2:** 50
Rate 3: 99 **Level 3:** 50
Rate 4: 99 **Level 4:** 50

Poly/Mono: Poly

Pitch Bend:	Range	Step
	01	00

Portamento:	Mode	Glissando	Time
	Sus-Key P Retain	Off	00

	Range	Pitch	Amplitude	EG Bias
Modulation Wheel:	00	Off	Off	Off
Foot Control:	00	Off	Off	Off
Breath Control:	00	Off	Off	Off
Aftertouch:	00	Off	Off	Off

VOICE NAME: *Vibesizz* **Created by:** Ian Shanahan

Sections that require this voice in "Lines of Light" ***DX7 I:*** – ***DX7 II:*** 7

Algorithm: 29 **Feedback:** 3 **Key Transpose:** A1

Pitch Modulation Sensitivity: 1 **Oscillator Synchronization:** On

LFO: Wave	Speed	Delay	PMD	AMD	Sync
Sine	14	99	13	12	On

	Operator 1	Operator 2	Operator 3	Operator 4	Operator 5	Operator 6
Ampl. Mod. Sens.:	0	0	0	1	0	0
Mode:	Ratio	Ratio	Ratio	Ratio	Ratio	Ratio
Frequency:	02.36	02.36	01.00	06.50	01.00	06.50
Detune:	+3	–2	–3	+0	+3	–4
EG Rate 1:	58	61	18	79	39	83
EG Rate 2:	00	38	22	16	22	13
EG Rate 3:	21	19	27	15	28	14
EG Rate 4:	27	28	29	21	29	20
EG Level 1:	99	99	94	99	99	99
EG Level 2:	99	86	67	81	67	82
EG Level 3:	00	00	00	00	00	00
EG Level 4:	00	00	00	00	00	00
Keyboard Level Scaling						
Break Pt.:	A–1	A–1	A–1	A–1	A–1	A–1
Curve L:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Curve R:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Depth L:	00	00	00	00	00	00
Depth R:	00	00	00	00	00	00
Kbd. Rate Scaling:	2	0	0	4	0	4
Op. Outpt. Level:	99	99	80	99	79	99
K. Velocity Sens.:	4	4	4	1	4	1

Pitch EG

Rate 1: 99 **Level 1:** 50
Rate 2: 99 **Level 2:** 50
Rate 3: 99 **Level 3:** 50
Rate 4: 99 **Level 4:** 50

Poly/Mono: Poly

Pitch Bend:	Range	Step
	01	00

Portamento:	Mode	Glissando	Time
	Sus-Key P Retain	Off	00

	Range	Pitch	Amplitude	EG Bias
Modulation Wheel:	00	Off	Off	Off
Foot Control:	00	Off	Off	Off
Breath Control:	00	Off	Off	Off
Aftertouch:	00	Off	Off	Off

VOICE NAME: *null* **Created by:** Yamaha Corporation?

For use on the DX7 Series I only: use the null voice between *every* voice-change.

Algorithm: 01 **Feedback:** 0 **Key Transpose:** C3

Pitch Modulation Sensitivity: 0 **Oscillator Synchronization:** Off

LFO: Wave	Speed	Delay	PMD	AMD	Sync
Triangle	00	00	00	00	Off

	Operator 1	Operator 2	Operator 3	Operator 4	Operator 5	Operator 6
Ampl. Mod. Sens.:	0	0	0	0	0	0
Mode:	Ratio	Ratio	Ratio	Ratio	Ratio	Ratio
Frequency:	01.00	01.00	01.00	01.00	01.00	01.00
Detune:	+0	+0	+0	+0	+0	+0
EG Rate 1:	99	99	99	99	99	99
EG Rate 2:	99	99	99	99	99	99
EG Rate 3:	99	99	99	99	99	99
EG Rate 4:	99	99	99	99	99	99
EG Level 1:	00	00	00	00	00	00
EG Level 2:	00	00	00	00	00	00
EG Level 3:	00	00	00	00	00	00
EG Level 4:	00	00	00	00	00	00
Keyboard Level Scaling						
Break Pt.:	A–1	A–1	A–1	A–1	A–1	A–1
Curve L:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Curve R:	–LIN	–LIN	–LIN	–LIN	–LIN	–LIN
Depth L:	00	00	00	00	00	00
Depth R:	00	00	00	00	00	00
Kbd. Rate Scaling:	0	0	0	0	0	0
Op. Outpt. Level:	00	00	00	00	00	00
K. Velocity Sens.:	0	0	0	0	0	0

Pitch EG

Rate 1: 99 **Level 1:** 50
Rate 2: 99 **Level 2:** 50
Rate 3: 99 **Level 3:** 50
Rate 4: 99 **Level 4:** 50

Poly/Mono: Poly

Pitch Bend:	Range	Step
	00	00

Portamento:	Mode	Glissando	Time
	Sus-Key P Retain	Off	00

	Range	Pitch	Amplitude	EG Bias
Modulation Wheel:	00	Off	Off	Off
Foot Control:	00	Off	Off	Off
Breath Control:	00	Off	Off	Off
Aftertouch:	00	Off	Off	Off

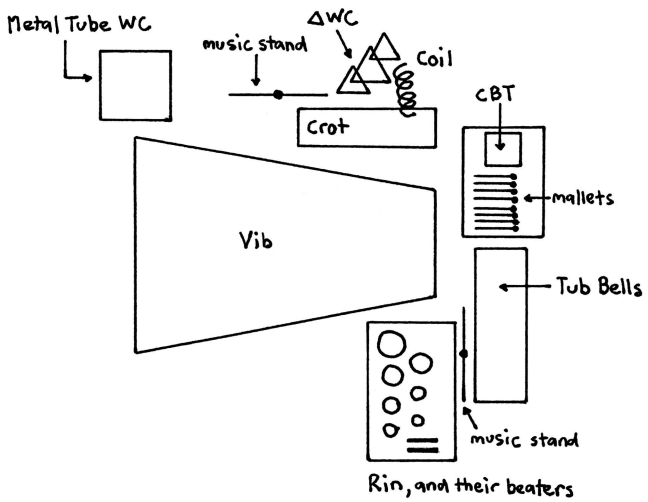
Lines of Light

Seven Improvisations on αἰθερος μελος

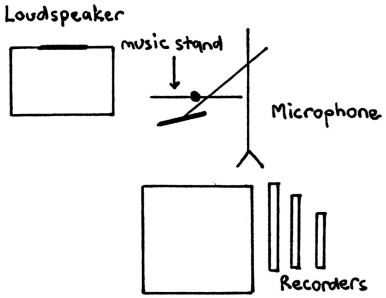
- In Memoriam Barbara Burke.
- For Roger Dean and Daryl Pratt to play with me.

AUDIENCE

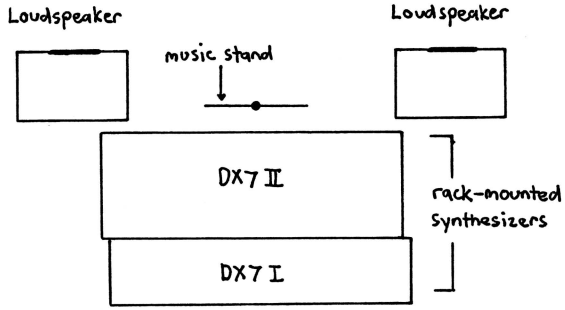
PHYSICAL LAYOUT OF THE INSTRUMENTS



Percussion



Recorder player



Yamaha DX7 synthesizers

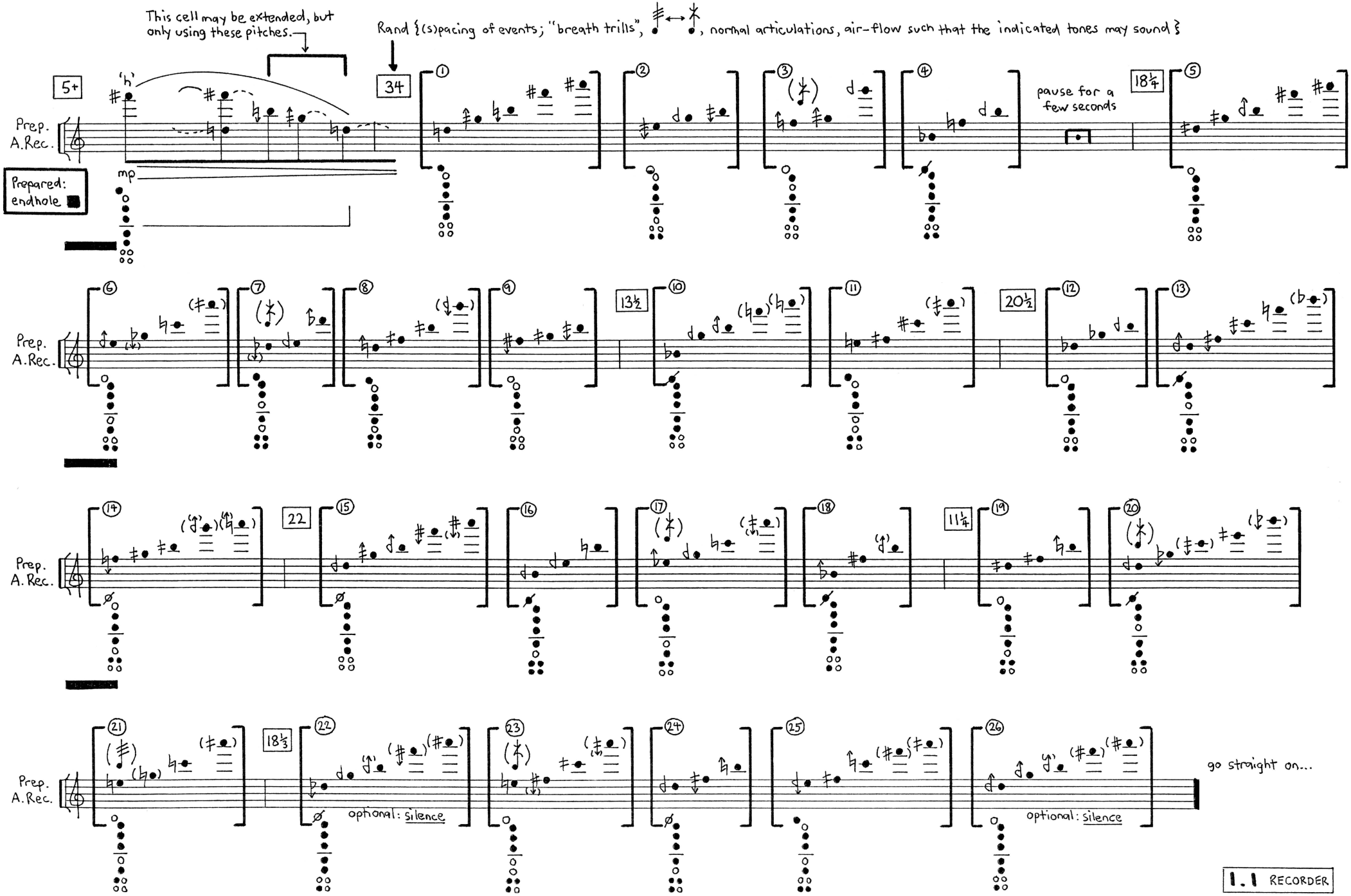
Lines of Light

Seven Improvisations
on αιθερος μελος

Improvisation 1

1

A volcanic yet ephemeral texture: glittering unceasingly, with great luminosity and searing heat (bubbling lava, solar flares, core of the sun...).
Maintain intensity of activity throughout. Breathe furtively: minimize caesurae (except where indicated).



1

A volcanic yet ephemeral texture: glittering unceasingly, with great luminosity and searing heat (bubbling lava, solar flares, core of the sun...).
Maintain intensity of activity throughout, adding your own material accordingly.

Rand { voice, octave transpositions, add material, (s)pacing of events; texture –  , , etc. – including tremolandi (≈ 40%); (length of key-depression), pedal;
ppp ⟷ fff (key velocity), these last three parameters interacting so that the sound-level almost never rises above 'mp' }

Voices:
DX7 I – Bowed Crot
DX7 II – Vibesizzle

DX7s

5+ 11¼ 20½

DX7s

18¼ 13½ 22

DX7s

34 18⅓

allow sounds to decay naturally;
go straight on...

1

A volcanic yet ephemeral texture: glittering unceasingly, with great luminosity and searing heat (bubbling lava, solar flares, core of the sun...).
Maintain intensity of activity throughout, adding your own material accordingly.

34 Rand {add material, (s)pacing of events; texture –  , , , etc. – including tremolandi (≈40%); ppp ⟷ mp; , ≤ 10%}

5+

Rin/ Tub Bells
CBT Coil
ΔWC
Crot
Vib

Rin

Tub Bells

gliss.

Ped

(always down)

Vib: Rand {motor ② ⟷ ⑤; pedal up ≤ 10% – so, very resonant}

Ped

13½

Rin

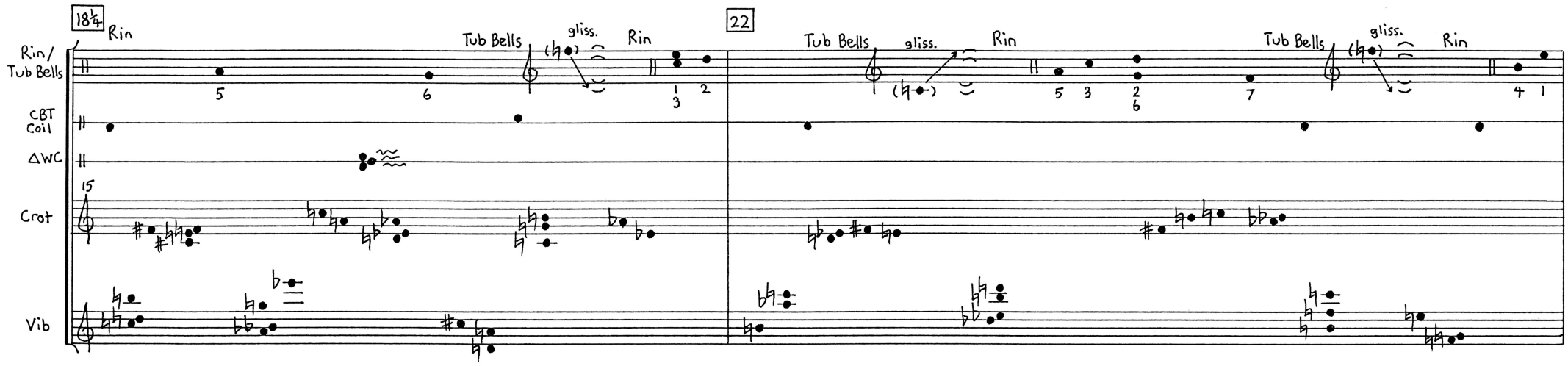
Tub Bells

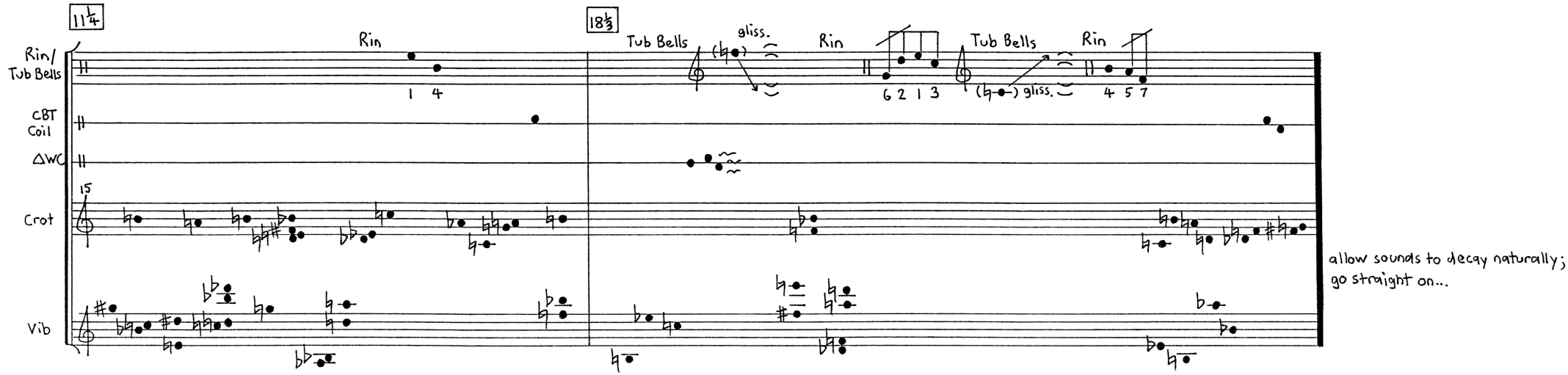
20½

gliss.

Rin

play the C♮ if possible!

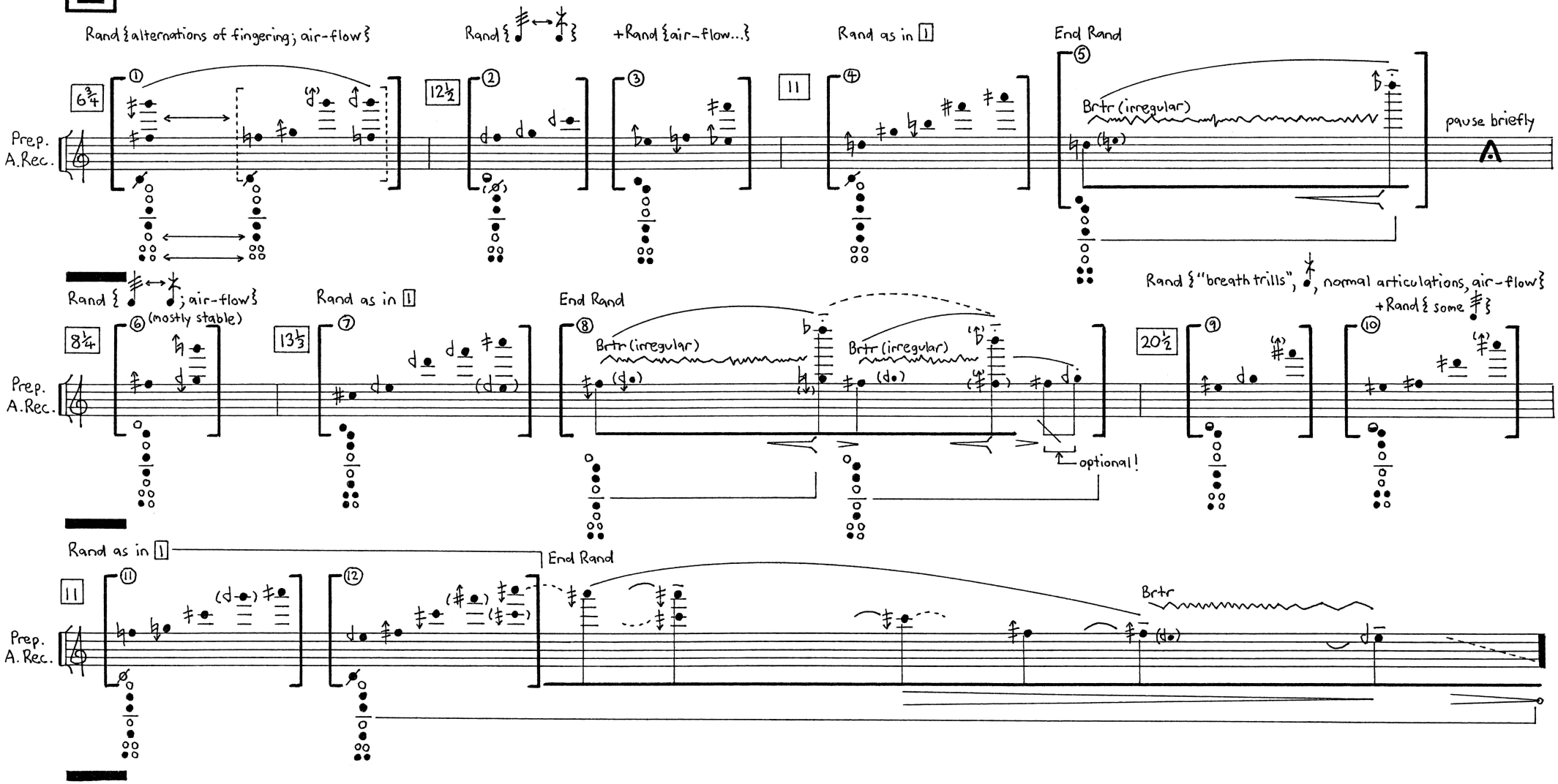




allow sounds to decay naturally; go straight on...

Improvisation 2

2 OPTIONAL: From ⑥ onwards, gradually introduce windows of silence of increasing length between bracketed pitch-sets – in random progression – that eventually 'obliterate' the recorder solo.



Prep. A.Rec.

Take Soprano Recorder for 4

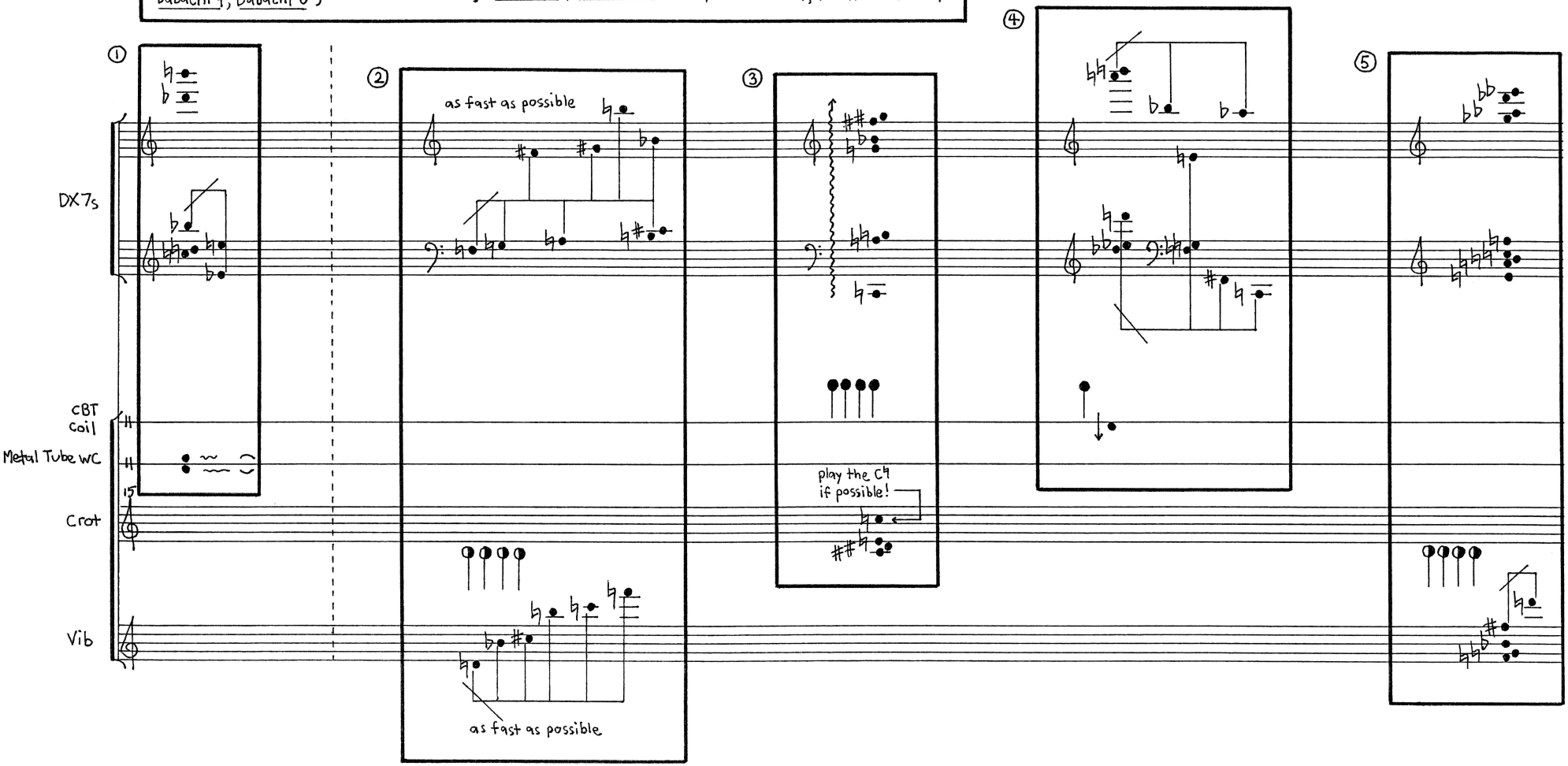
2

BRIEF, COORDINATED INTERJECTIONS: Place interjection ① within the first 'real' silence (after the recorder's 5th sonority). Choose three or four more boxes from among the remaining menu of interjections – reach agreement on this during rehearsal – and deploy them freely, wherever desired, thereafter. (Do try to overlap them with the recorder's indeterminate silences somewhat.)

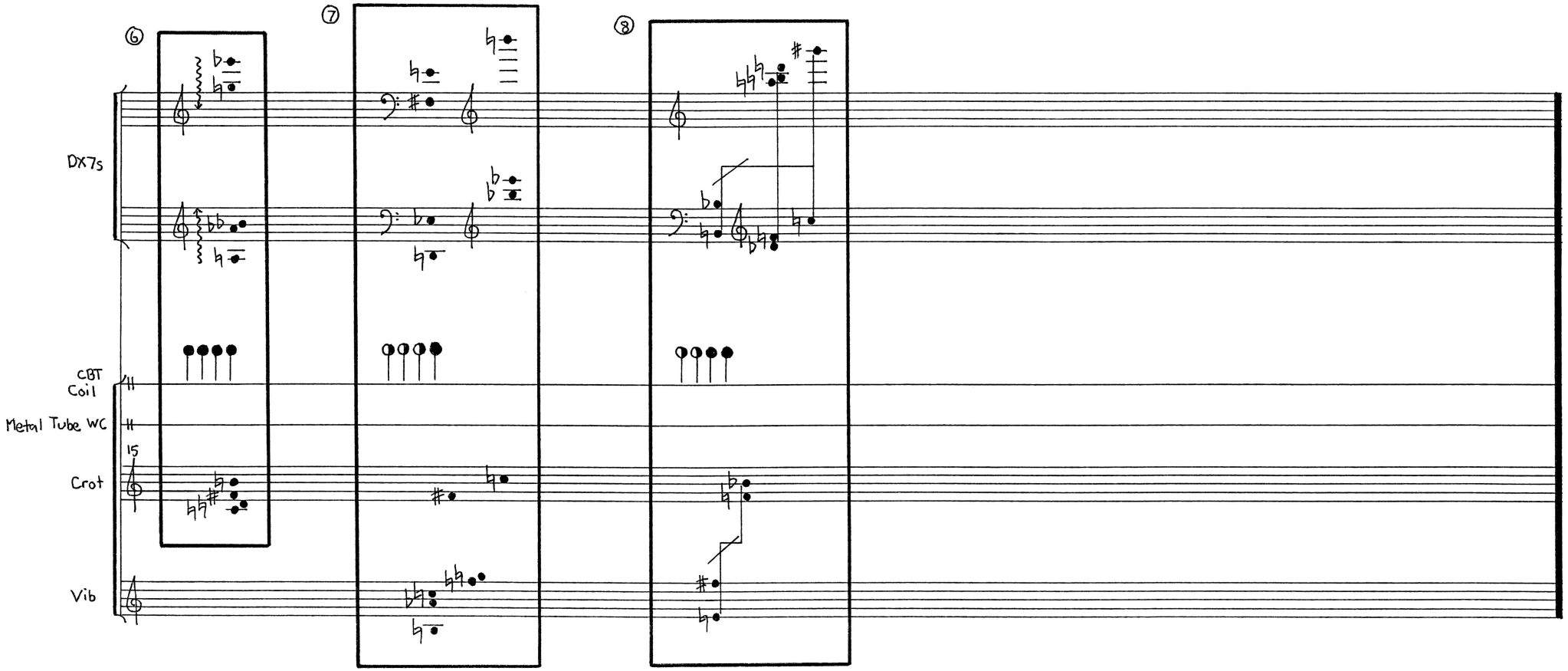
DX7s: Rand {voice, octave transpositions; 𝅝 ⟷ 𝅜 (length of key-depression), pedal; ppp ⟷ ff (key velocity)}

Percussion: Rand { durations ≤ ≃ 3"; 𝅝, 𝅗𝅥, vibraphone pedalling; ppp ⟷ fff }

Voices:
Clay Pot, Dabachi 2, Dabachi 4, Dabachi 6 } free choice among these – various combinations (any/all); key split; simultaneity...
or other voices – e.g. Vibesizzle, Bowed Crot – may be selected, for timbral unity...



Commence the next section as soon as the recorder has finished – no caesura.



Improvisation 3

3

A complex interplay of photons : brilliant, expansive and volatile.

DX7s: Rand { voice - but biased somewhat towards DX7 II, octave transpositions, add material, (s)pacing of events; texture -  ,  , etc.; (length of keydepression), pedal; ppp ↔ f (key velocity) }

Voices:
DX7 I - Dabachi 3
DX7 II - Chimes 1

DX7s

Tub Bells

Tubular Bells: Rand { add material, (s)pacing of events; texture -  ,  , etc.;  ;  , ≤ 25%; ppp ↔ fff }

gliss.

Ped (...) always down

DX7s

– Rand { add material }

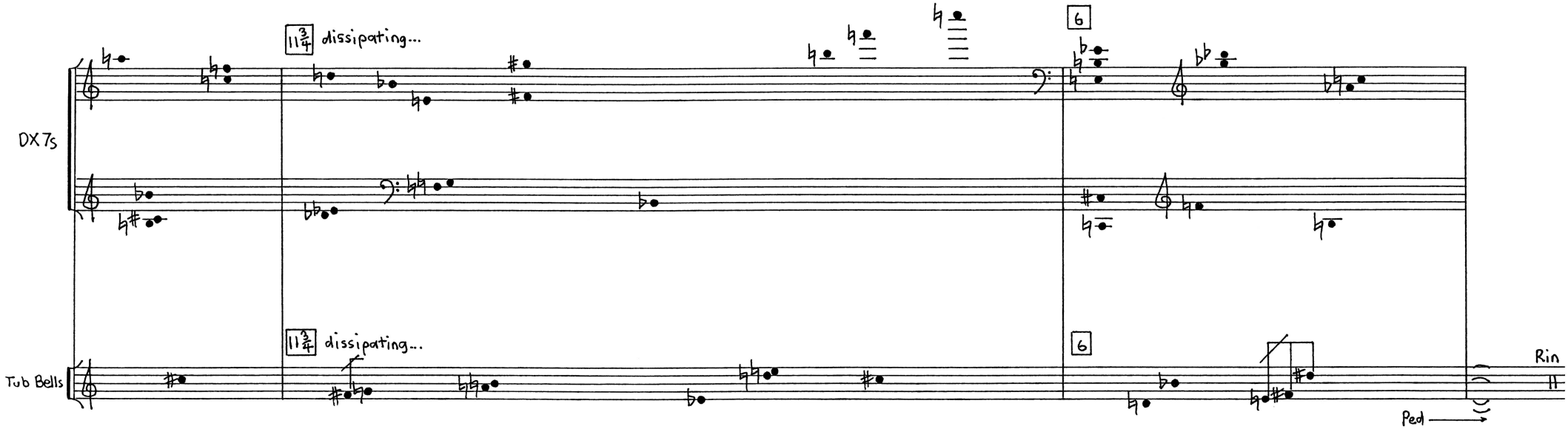
+ Rand { add material }

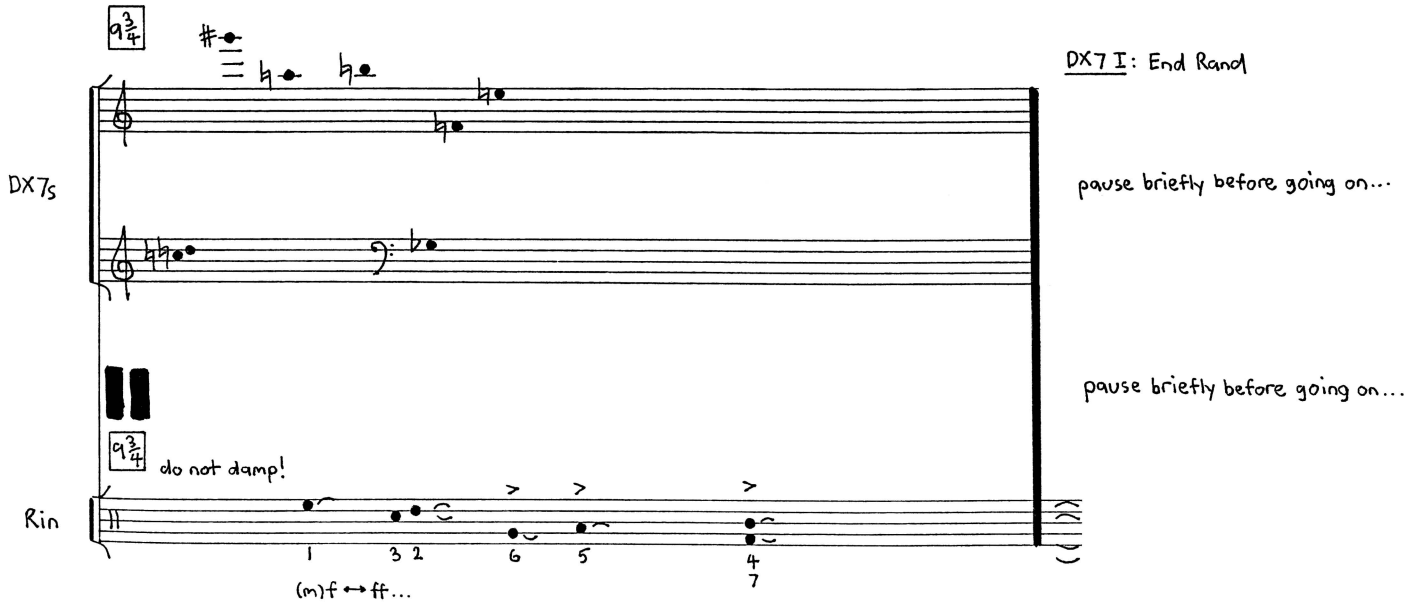
(Ped ...)

Tub Bells

wild and cosmic.

turn hammer sideways.





DX7 I: End Rand

pause briefly before going on...

pause briefly before going on...

Improvisation 4

4

A fresh onslaught: like all-embracing waves of light!

DX7 I

12 3/4

S.Rec.

all multiphonics: well-balanced.

Voices:
DX7 I – VibeSizzle
DX7 II – Dabachi 4 / Dabachi 2 (or other voices)

Rec

DX7 II: Rand { octave transpositions; add/delete material, (s)pacing of events; texture – , , , etc.; (length of key-depression), pedal }

DX7 I

sffz

Ped

DX7 II

"echo"

p poss. sempre!

Percussion: Rand { add/delete material, (s)pacing of events; texture – , , , etc.; ppp ⟷ fff }

sempre

Rin

CBT Coil

ΔWC

Crot

15

sempre

Crot: Rand { , , ≤ 25% }

Vib: Rand { motor ① ⟷ ⑥ – but only one motor-setting per bar }

Vib

Ped

(pp)

7 1/4

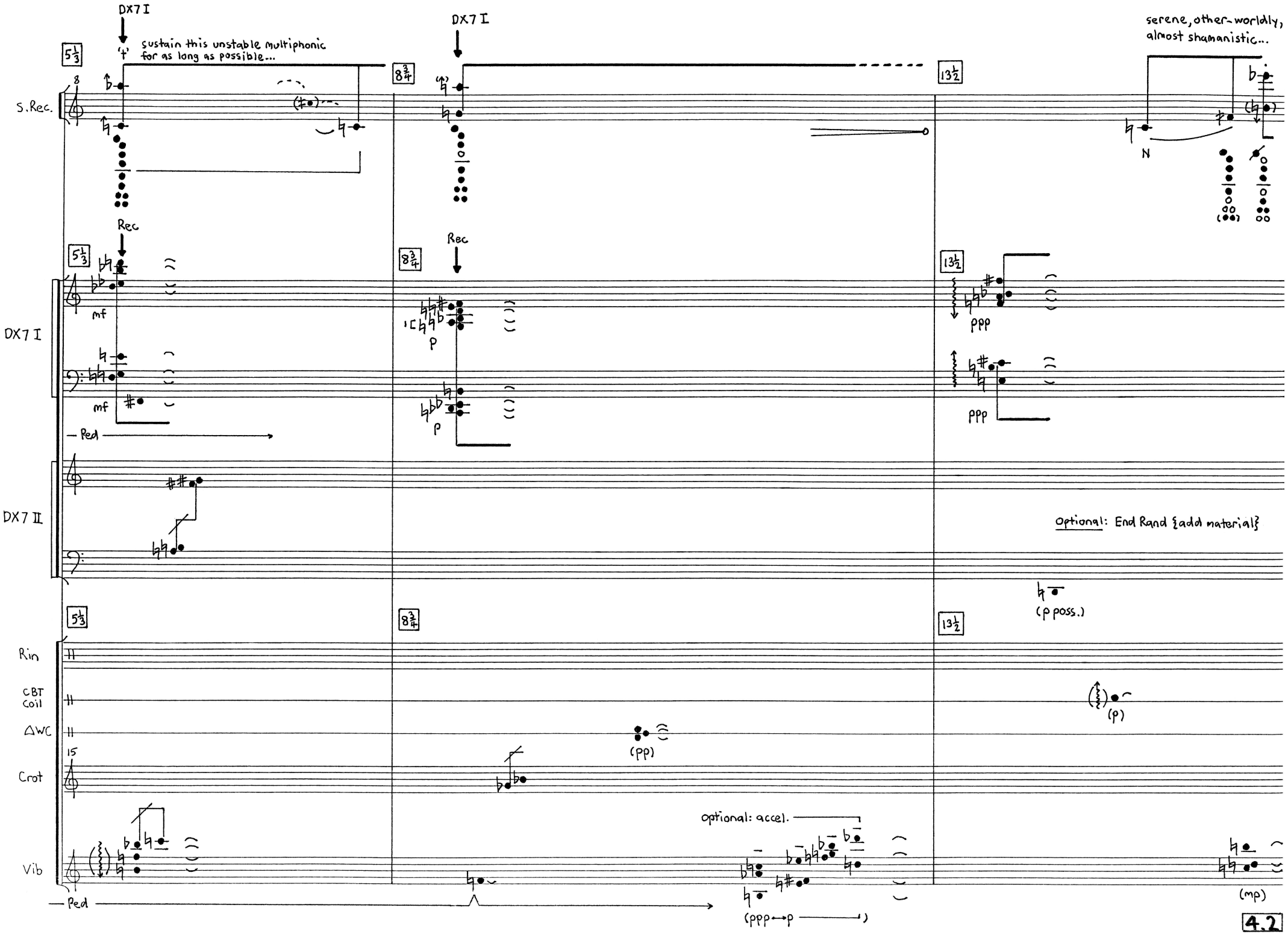
DX7 I

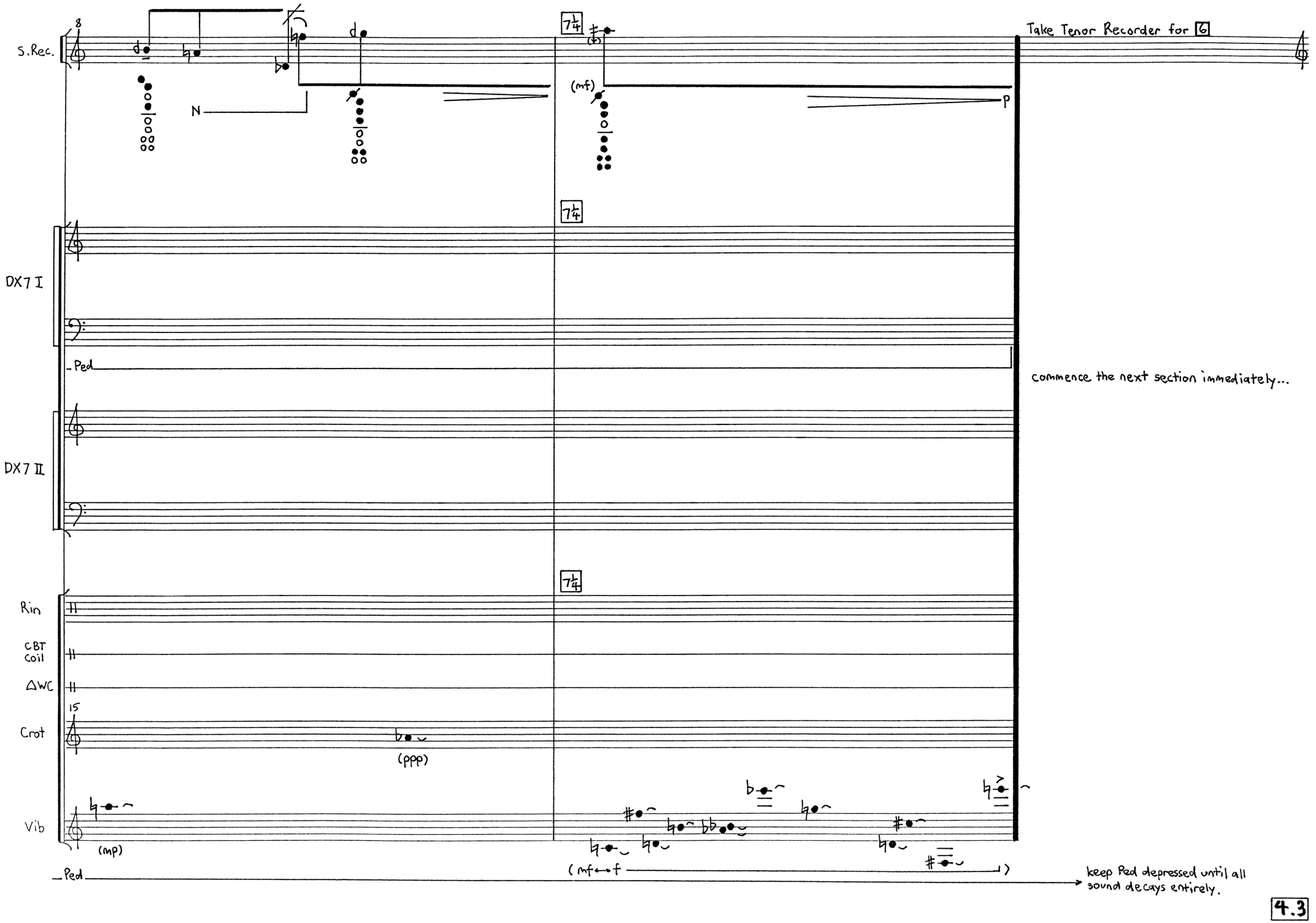
Rec

sffz

sempre

5


DX7 I
sustain this unstable multiphonic for as long as possible...
'f'
5 1/3
8 3/4
13 1/2
S.Rec.
serene, other-worldly, almost shamanistic...
N
Rec
DX7 I
mf
p
ppp
Ped
DX7 II
Optional: End Rand {add material}
(p poss.)
Rin
CBT Coil
ΔWC
Crot
Vib
(pp)
(p)
optional: accel.
(ppp→p)
(mp)
4.2


S.Rec.
8
N
7/4
(mf)
p
Take Tenor Recorder for 6
DX7 I
Ped
commence the next section immediately...
DX7 II
Rin
CBT Coil
ΔWC
15
Crot
(ppp)
Vib
(mp)
(mf<f)
Ped
keep Ped depressed until all sound decays entirely.

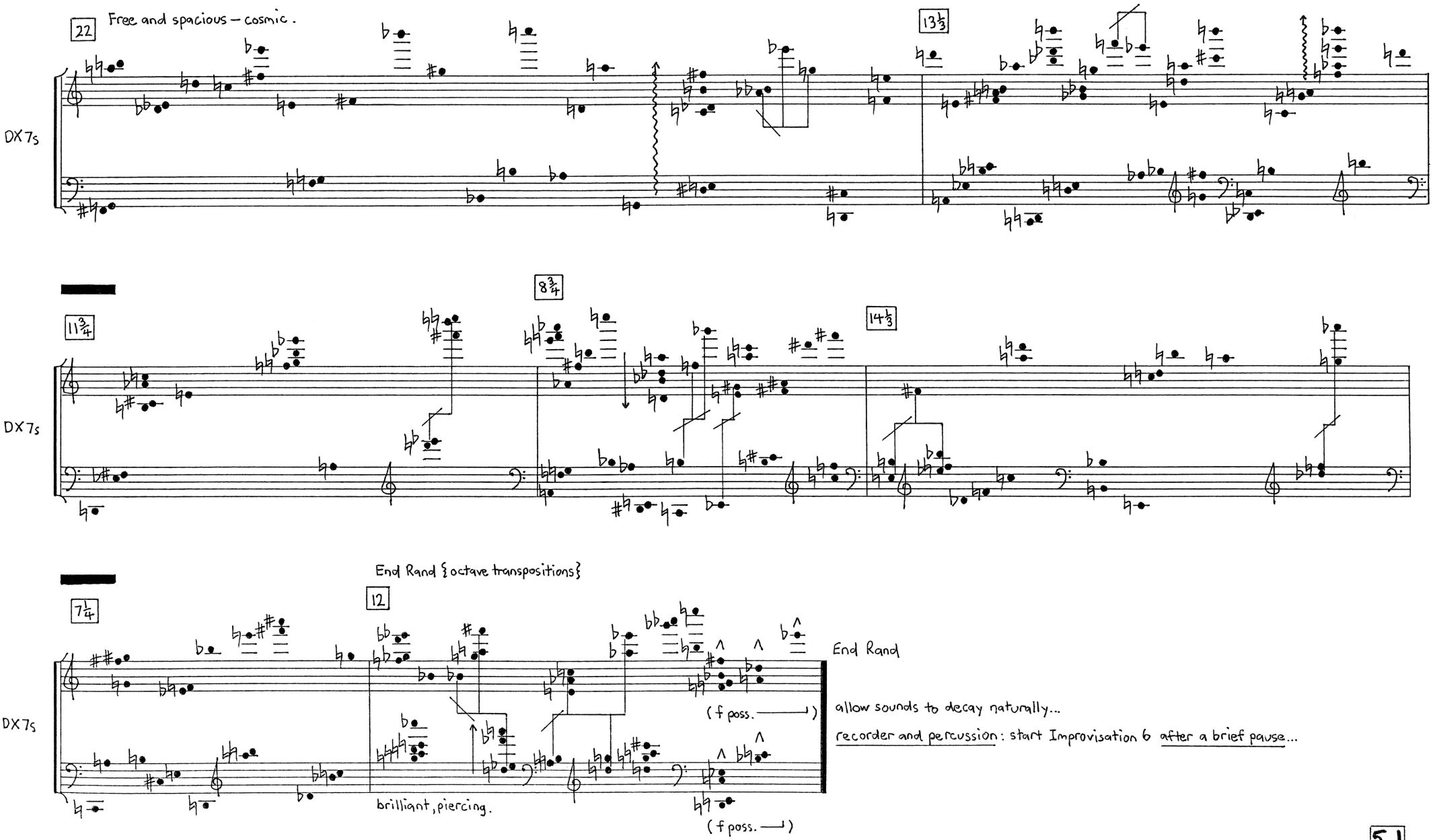
Improvisation 5

5

Rand{ voice, octave transpositions, add/delete material, (s)pacing of events; texture – , , etc.; pitch-wheel (max. range = 1 semitone); ⟷ (length of key-depression), pedal; ppp ⟷ fff (key velocity)} Optional: Rand{ volume pedals}

DX7 II: beautiful and interesting results may be obtained by experimenting with this keyboard's microtonal capabilities...

Voices:
DX7 I – Low Hollow 1
DX7 II – Dabachi 5 (or other voices)



allow sounds to decay naturally...

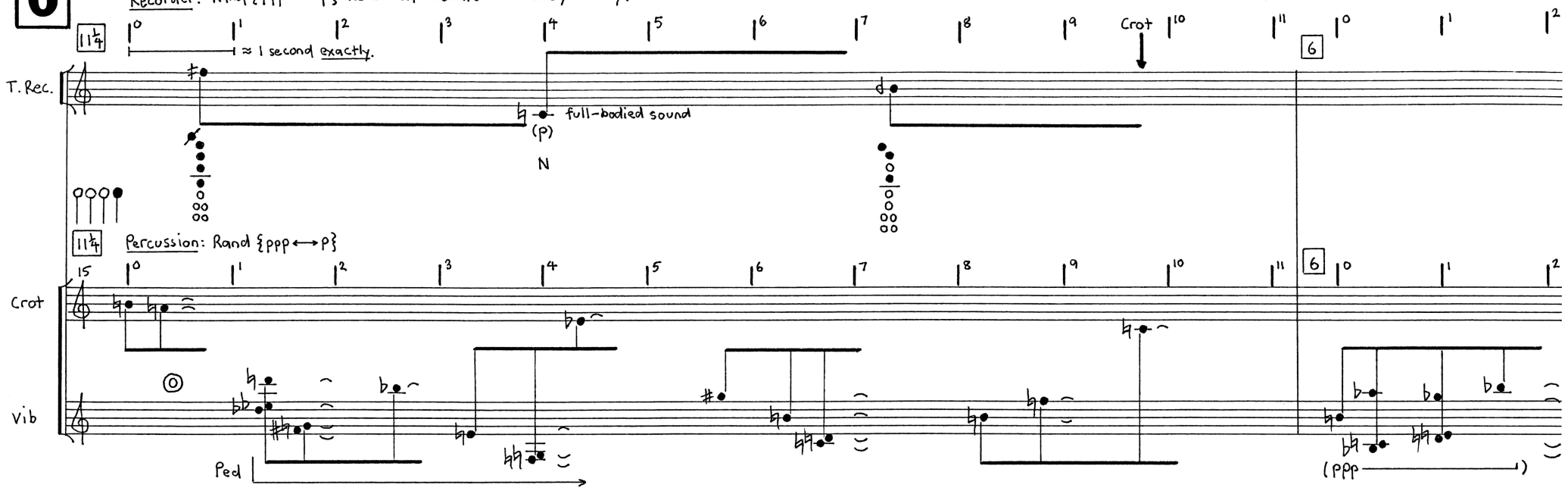
recorder and percussion: start Improvisation 6 after a brief pause...

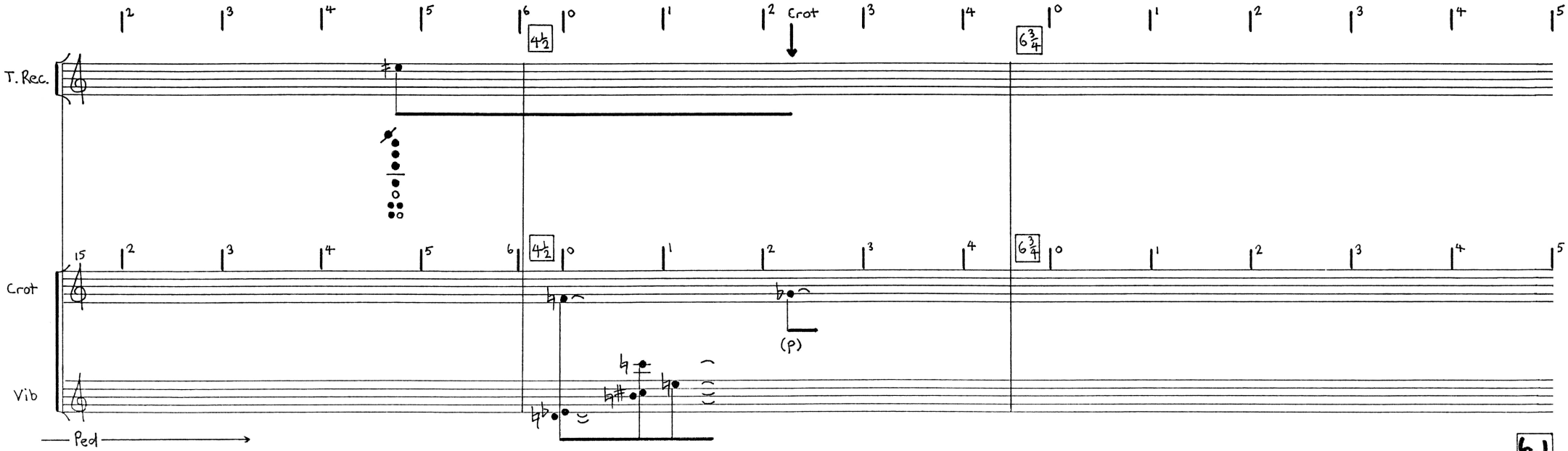
Improvisation 6

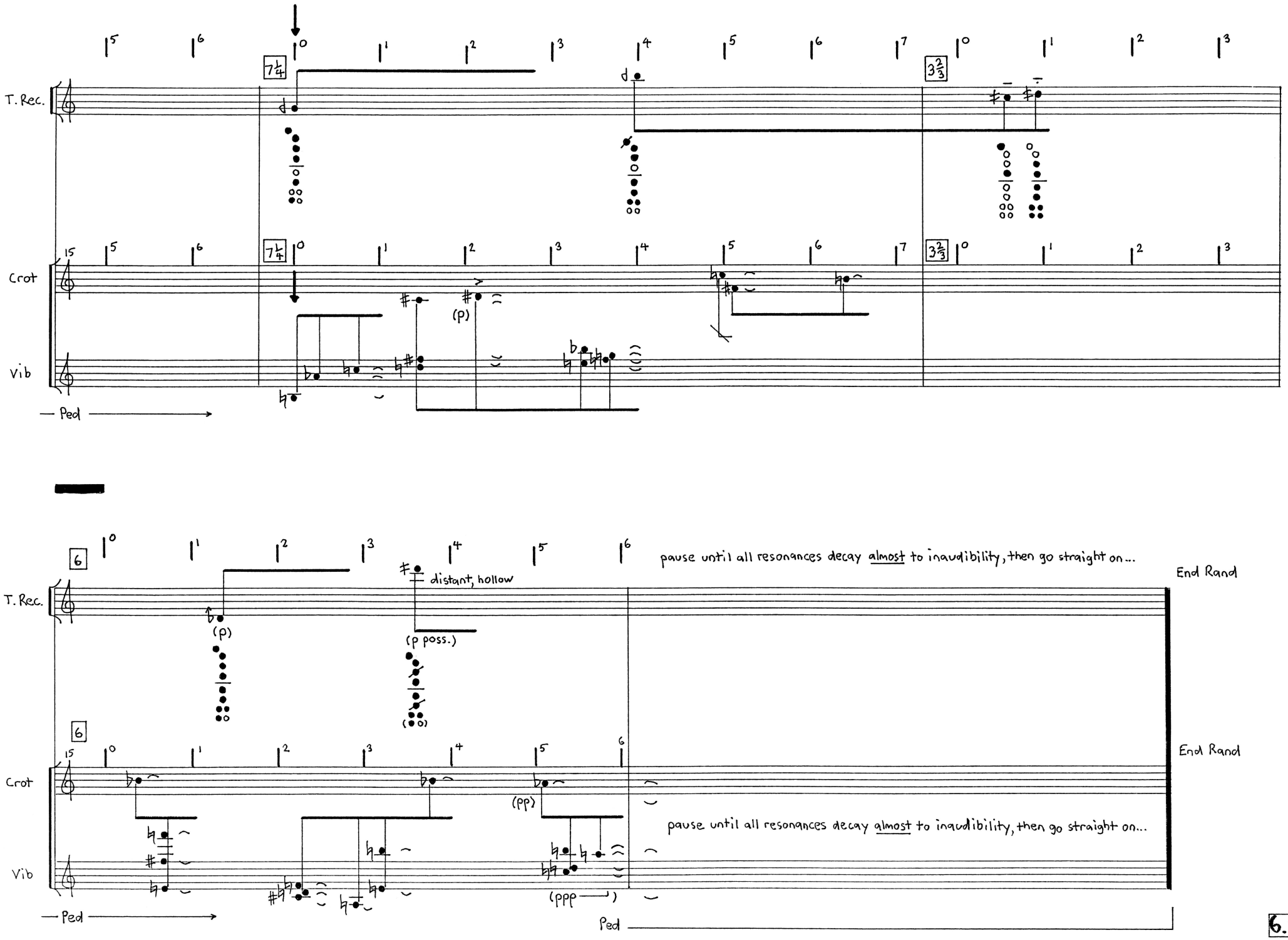
6

Infinitely placid, timeless.

Recorder: Rand {ppp ⟷ p} No breath-vibrato: absolutely steady!






T. Rec.
Crot
Vib
Ped
7¼
3⅔
(p)
6
distant, hollow
(p poss.)
(pp)
(ppp)
pause until all resonances decay almost to inaudibility, then go straight on...
End Rand
End Rand
pause until all resonances decay almost to inaudibility, then go straight on...
Ped

Improvisation 7

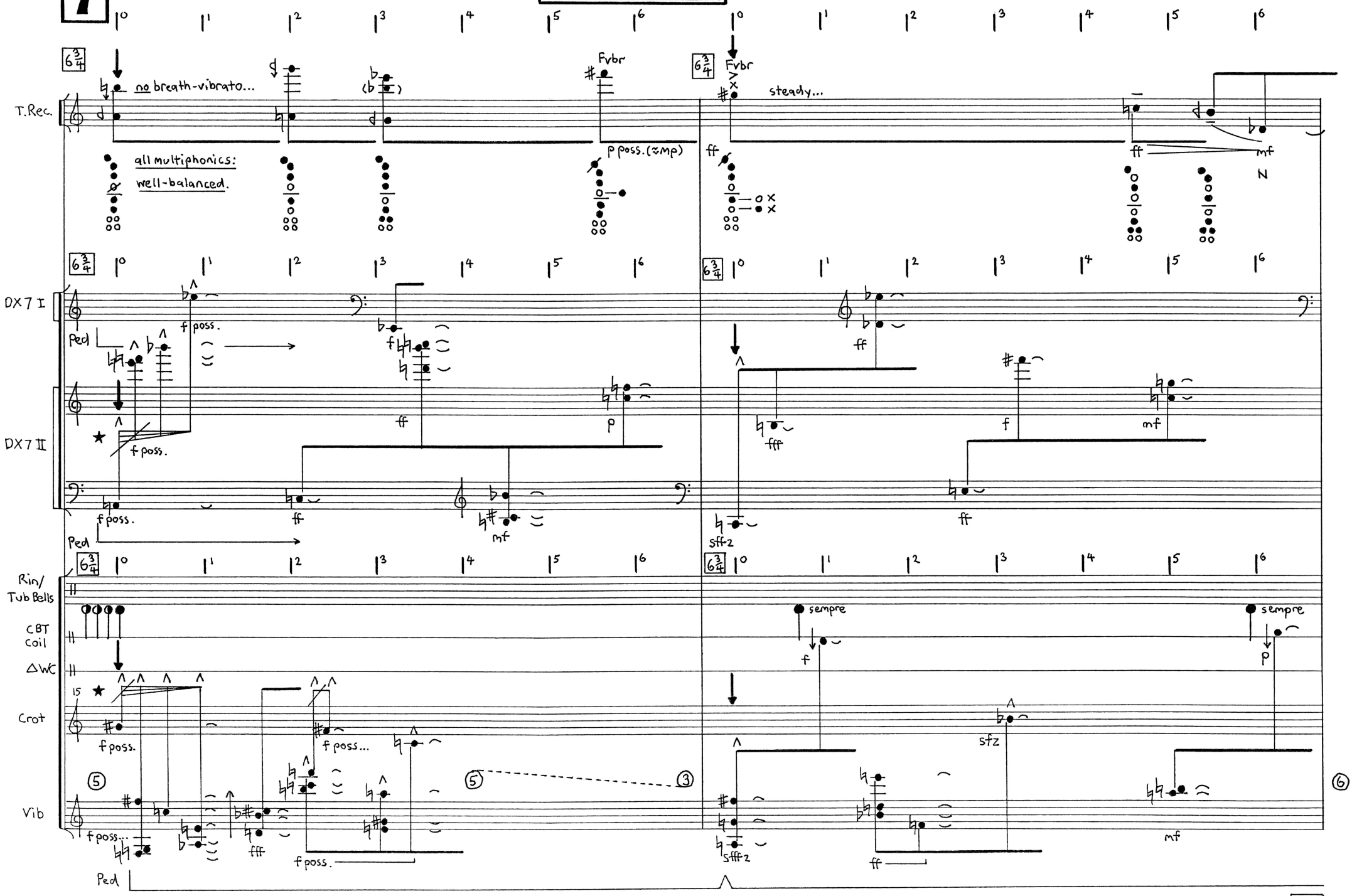
αιθερος μελος : μελος φωτος

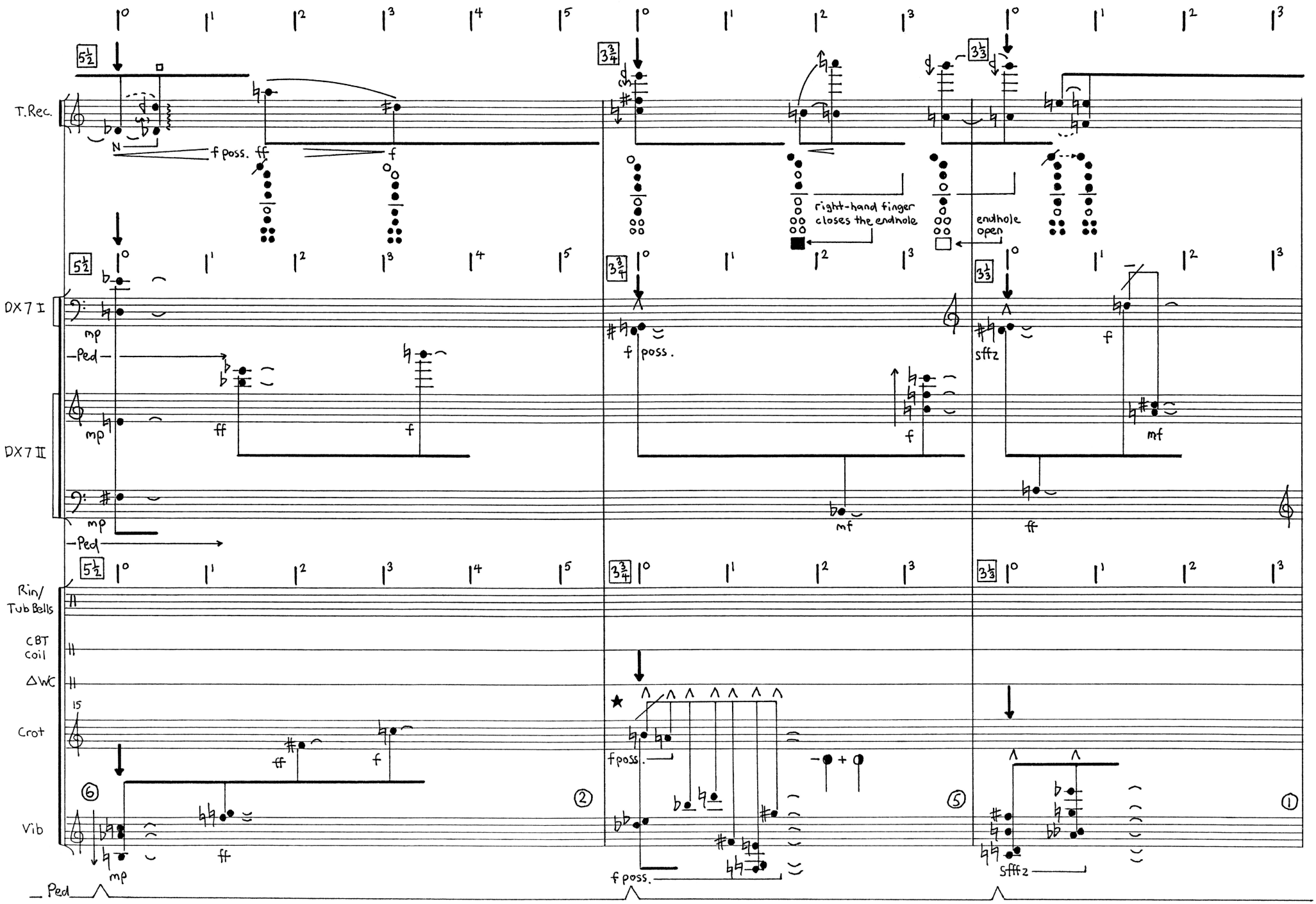
7

Monolithic but glistening: hieratic. "Music of the Spheres"

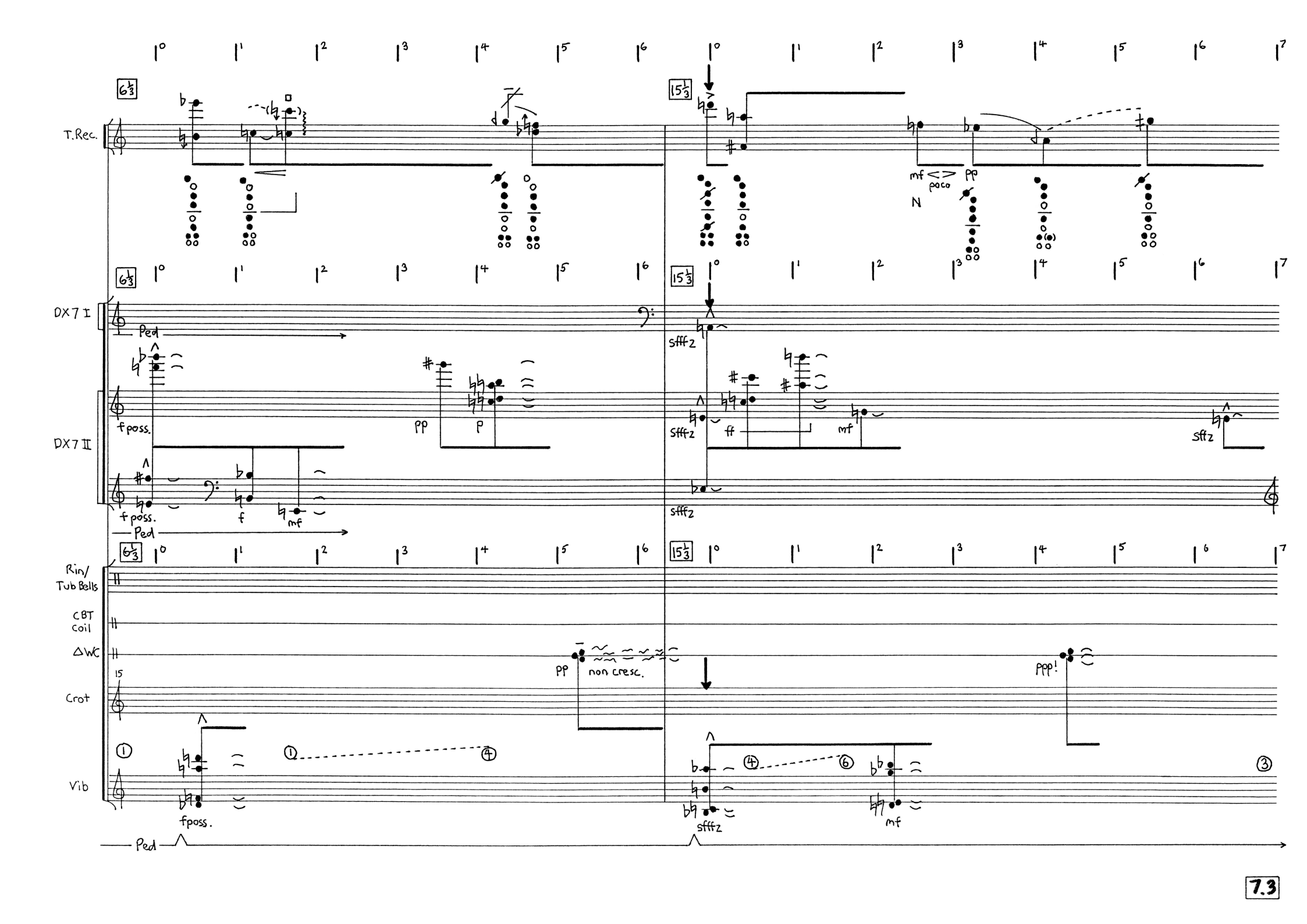
DX7 Voices:
DX7 I – Low Hollow 2
DX7 II – Bowed Crot/Vibesizz

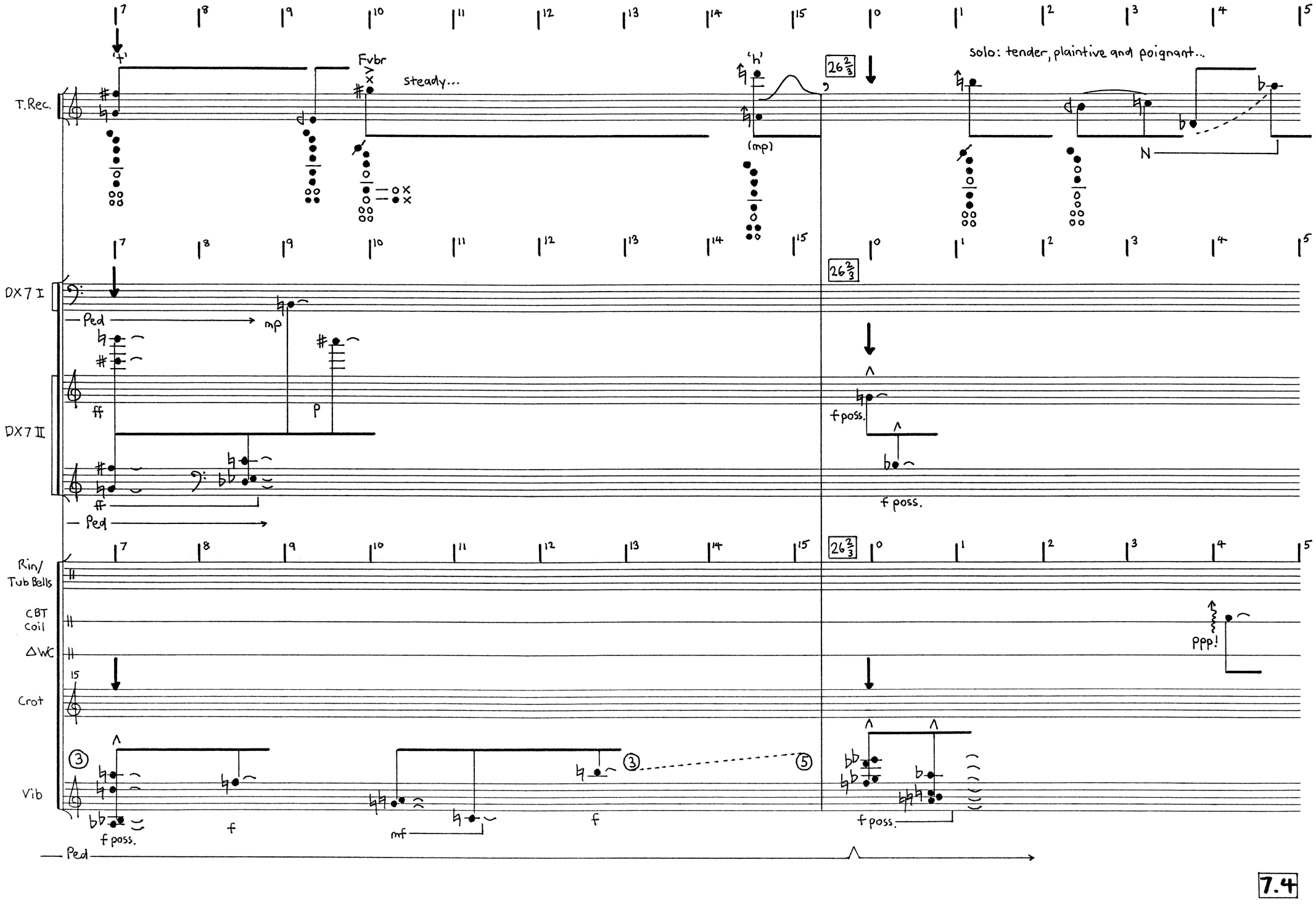
★ Brilliant! Execute the flourish as fast and as violently as possible.

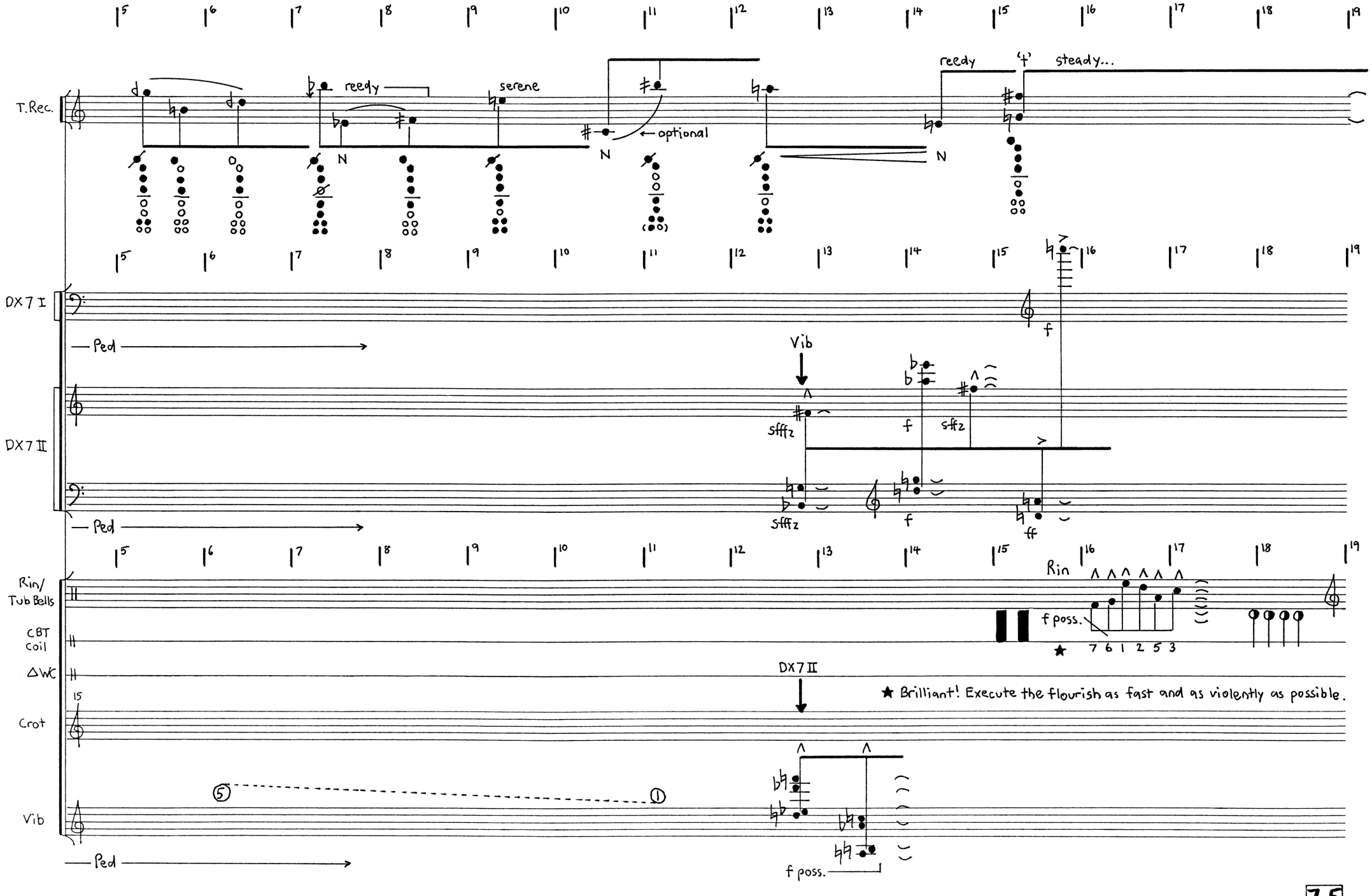


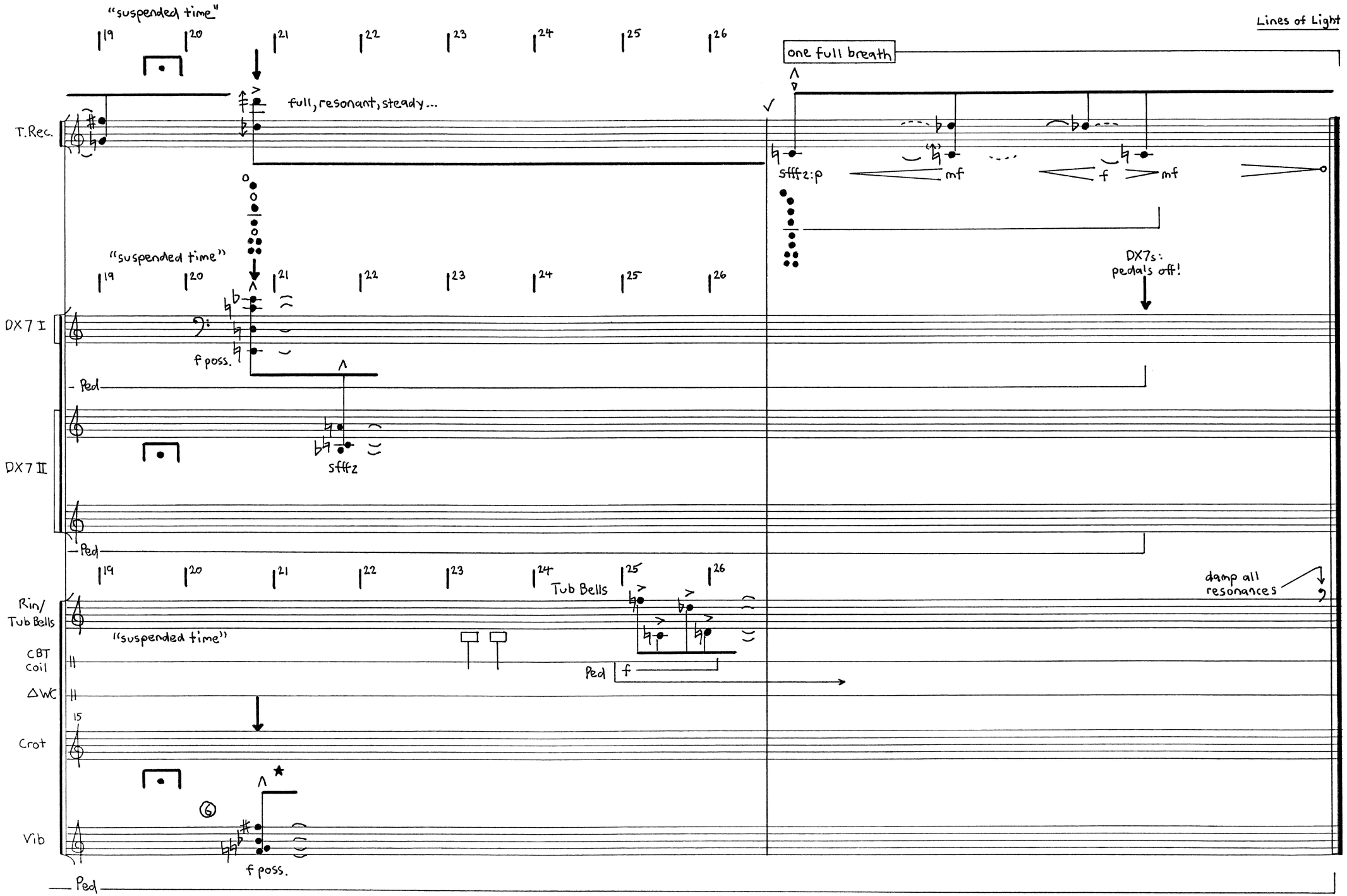


★ Brilliant! Execute the flourish as fast and as violently as possible.


T.Rec.
DX7 I
DX7 II
Rin/
Tub Bells
CBT
Coil
ΔWC
Crot
Vib
Ped
fposs.
pp
p
f
mf
non cresc.
sfffz
ff
sffz
ppp!
poco
N


T.Rec.
DX7 I
DX7 II
Rin/
Tub Bells
CBT
Coil
ΔWC
Crot
Vib
Fvbr
steady...
(mp)
solo: tender, plaintive and poignant...
N
Ped
mp
ff
p
fposs.
f
mf
ppp!
7.4


T.Rec.
reedy
serene
optional
reedy
'+'
steady...
DX7 I
Ped
Vib
sfffz
f
sffz
f
sfffz
f
ff
DX7 II
Ped
Rin/
Tub Bells
CBT
Coil
ΔWC
Crot
Vib
Rin
f poss.
7 6 1 2 5 3
DX7 II
★ Brilliant! Execute the flourish as fast and as violently as possible.
f poss.
Ped



★ If the vibraphone's pedal cannot be kept depressed while playing the tubular bells, then either omit this chord altogether (as a last resort), or, better still, sustain the pedal-depression as long as possible – past 24".

P. S. Sharman.
Sydney, Australia,
18 November 1993.

7.6

FINE.